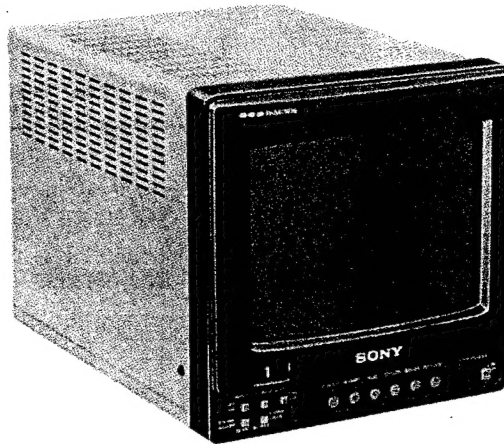


PVM-8220

SERVICE MANUAL

*US Model
Canadian Model*

Chassis No. SCC-684A-A



August, 1985

SPECIFICATIONS

Color system NTSC system
Picture tube Microblack Trinitron tube
8-inch picture measured diagonally,
70-degree deflection
Resolution 250 TV lines (B/W)
Color temperature 9300°K
Frequency response 4 MHz (-3 dB)
Horizontal linearity ±8%
Vertical linearity ±8%
Line pull range Horizontal ±500 Hz
Overscan of the picture 6%
Underscan of the picture 5%
H/V delay Horizontal: Approx. 1/4 line
Vertical: Approx. 1/2 field
Return loss 5 MHz, -30 dB (VIDEO A IN, VIDEO B IN)
Zooming Within 3%
Convergence Central area 0.5 mm
Periphery 0.7 mm
Brightness More than 50 foot-lamberts
Inputs VIDEO IN (VIDEO A, VIDEO B):
BNC connector
Composite 1 V p-p ±6 dB,
75 ohms, unbalanced, sync-
negative
Non-composite 0.7 V p-p
EXT SYNC IN: BNC connector
Composite sync 4 V p-p ±6 dB,
sync negative, 75 ohms and high
impedance switchable

Loop-through outputs
VIDEO OUT (VIDEO A, VIDEO B):
BNC connector
Composite 1 V p-p ±6 dB,
75 ohms, unbalanced, sync
negative
Non-composite 0.7 V p-p
EXT SYNC OUT: BNC connector
Composite sync 4 V p-p ±6 dB,
sync negative, 75 ohms and high
impedance switchable
TALLY connector 4-pin DIN connector
Power requirements 120 V ac, 50/60 Hz
Power consumption 30 W ac, max.
Dimensions Approx. 216 × 219 × 319 mm (w/h/d)
(8⁵/₈ × 8⁵/₈ × 12⁵/₈ inches)
incl. projecting parts and controls
Weight Approx. 7.5 kg (16 lb 9 oz)
not incl. accessories
Accessories supplied
AC power cord (1)
Tally connector (4-pin DIN) (1)
Number plate (1 set)
Optional accessory
Mounting bracket MB-504




TRINITRON®
COLOR VIDEO MONITOR
SONY®

MON


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SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

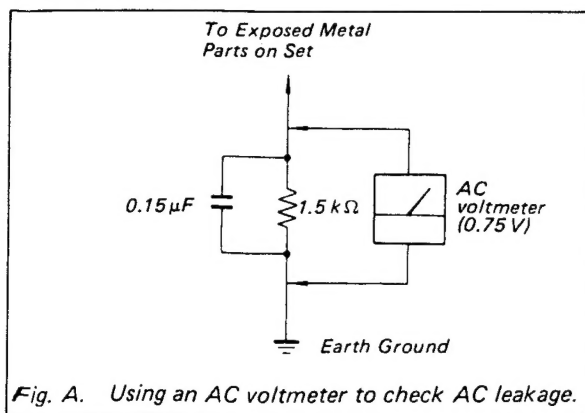
ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.



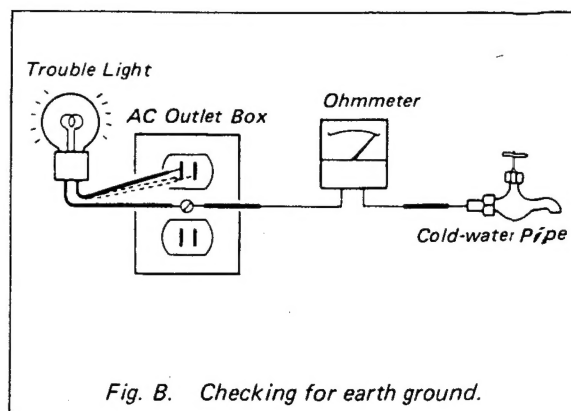
LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)



SECTION 1

GENERAL

1-1. FEATURES

Microblack™ Trinitron® picture tube

The Microblack Trinitron picture tube gives a high resolution, high contrast picture.

Push-to-lock controls

In the locked position, the controls are protected from damage during carriage of the unit. The protruding position allows easier operation.

Monitor of sync signals

The H/V-DELAY switch allows horizontal and vertical sync signals to be displayed on the screen.

Blue only picture

By using the B-ONLY switch, the picture can be displayed in blue and black only, facilitating hue adjustment or observation of VTR noise.

Underscan mode

The signal normally scanned outside of the screen can be monitored in the underscan mode facilitating check of video signals.

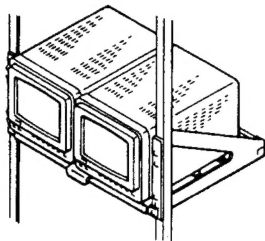
External sync connection

The unit can operate on an external sync signal in synchronization with other VTR equipment.

Two video inputs

Two video sources can be connected to the unit. Either input can easily be switched by pressing the INPUT select switch.

By using an optional MB-504 mounting bracket, this unit can be mounted in an EIA standard 19-inch rack.



For mounting details, refer to the instruction manual of the MB-504.

1-2. PRECAUTIONS

On safety

- Operate the unit only on 120 V ac.
Use only the supplied ac power cord. Do not use any other type.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for several days.
- To disconnect the ac power cord, pull it out by the plug. Never pull the cord itself.

On installation

- Allow adequate air circulation to prevent internal heat build-up.
Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Keep the unit away from a loudspeaker or motor, as the picture may be affected.

On cleaning

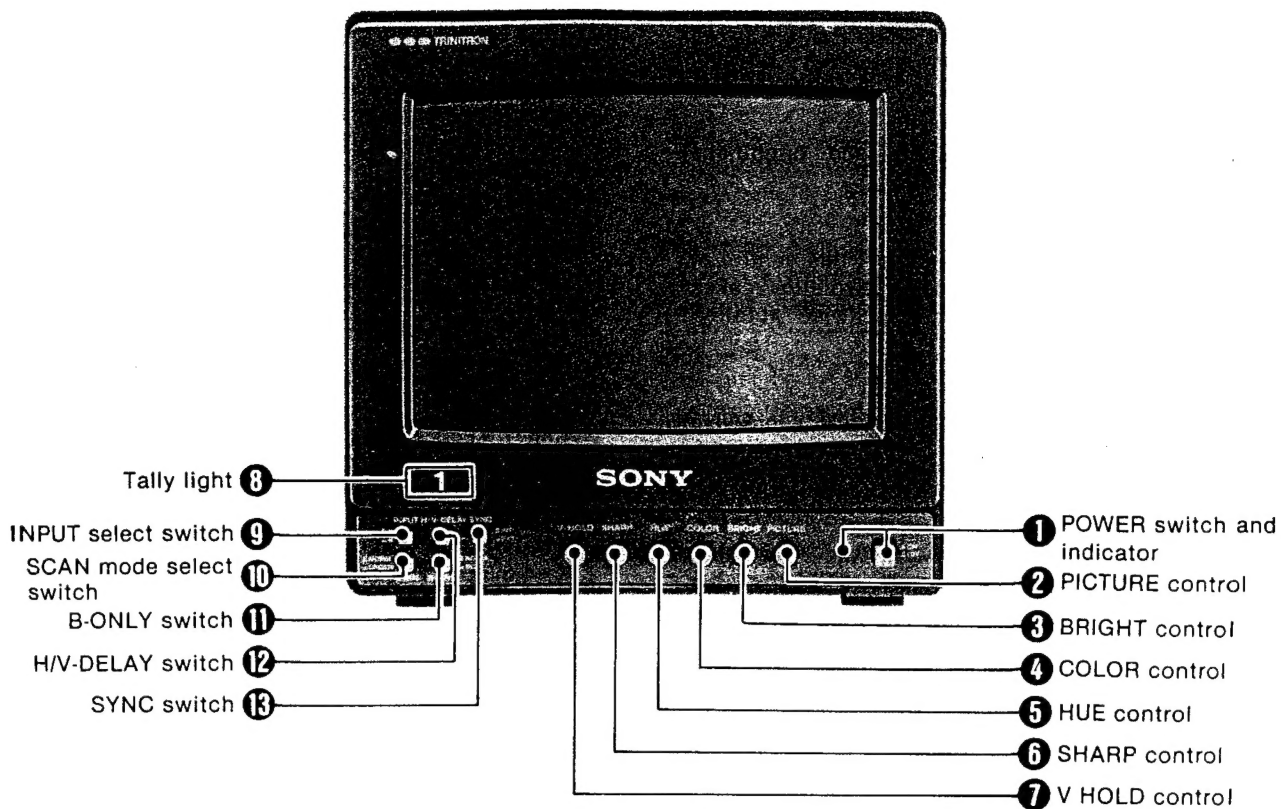
To keep the unit looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

On repacking

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony dealer.

1-3. LOCATION AND FUNCTION OF CONTROLS



① POWER switch and indicator

To turn the monitor on, depress the POWER switch (⏏ ON). The POWER indicator lights. To turn it off, press the switch again (⏏ OFF).

② PICTURE control

Adjusts the contrast, intensity and brightness simultaneously in the proper ratio.

③ BRIGHT (brightness) control

Adjusts the brightness. Normally set this control at the center detent position. Clockwise rotation makes the picture brighter; counterclockwise rotation makes it darker.

④ COLOR control

Adjusts the color intensity of the picture. Clockwise rotation makes the picture more vivid; counterclockwise rotation makes it paler.

⑤ HUE control

Use to obtain the most natural skin tones. Clockwise rotation makes the skin tones more greenish; counterclockwise rotation makes them more purplish.

⑥ SHARP (sharpness) control

Adjusts the sharpness of the picture. Clockwise rotation makes the picture sharper; counterclockwise rotation makes it softer.

⑦ V HOLD (vertical hold) control

If the picture rolls vertically, correct it with this control.

Before turning one of the controls ② to ⑦, for easier operation press on it to release the control to a protruding position.

⑧ Tally light

This light is turned on and off according to the signal supplied to the TALLY connector at the rear from a console or special-effects generator. To identify the monitor, insert the supplied number plate.

⑨ INPUT select switch

Keep this switch released (⏏ A) to monitor the signal from the VIDEO A IN connector.

Depress the switch (⏏ B) to monitor the signal from the VIDEO B IN connector.

⑩ SCAN mode select switch

Keep this switch released (⏏ NORM) for normal scanning.

Depress the switch (⏏ UNDER) to reduce the display size by about 5% (underscanning mode) and to view a picture which does not appear in normal scanning.

⑪ B-ONLY (blue only) switch

Normally keep this switch released (⏏ NORM).

Depress the switch (⏏ BLUE) to turn off the red and green beams. The picture will be displayed in blue and black only. This facilitates hue adjustment or observation of VTR noise.

⑫ H/V-DELAY switch

Normally keep this switch released.

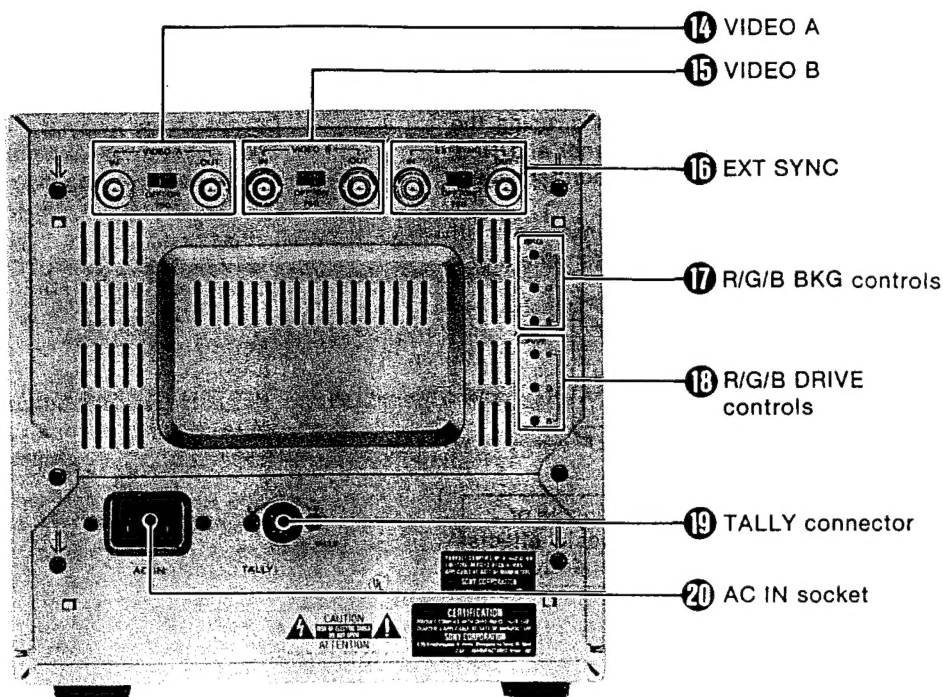
To monitor the sync signals, depress the switch. The picture is shifted horizontally and vertically. The horizontal sync is displayed in left approximately one quarter of the screen and the vertical sync is displayed near the center of the screen.

⑬ SYNC switch

Normally keep this switch released (⏏ INT). The monitor is driven with the internal sync signal.

To drive the monitor with an external sync signal connected to the SYNC IN connector at the rear, depress the switch (⏏ EXT).

Rear

**14 VIDEO A, 15 VIDEO B**

Two video input connectors (VIDEO A and VIDEO B) for the composite video signals and their loop-through output connectors.

To monitor the input signals connected to the VIDEO A IN connector, keep the INPUT select switch released (\square A).

To monitor the input signals to the VIDEO B IN connector, depress the INPUT select switch (\triangle B).

IN connector (BNC type)

Connect to the video output of video equipment, such as a VTR or a color video camera.

OUT connector (BNC type)

Loop-through output of the IN connector. Connect to the video input of a VTR or another monitor.

75 Ω termination switch

When only the IN connector is used (the OUT connector is not used), set this switch to ON. When both the IN and OUT connectors are used together for a loop-through connection, set the switch to OFF.

16 EXT SYNC (external sync)**IN connector (BNC type)**

When this monitor operates on an external sync signal, connect the reference signal from a sync generator to this connector.

OUT connector (BNC type)

Loop-through output of the EXT SYNC IN connector. Connect to the external sync input of video equipment to be synchronized with this monitor.

75 Ω termination switch

When only the EXT SYNC IN connector is used (the EXT SYNC OUT connector is not used), set this switch to ON. When both the EXT SYNC IN and OUT connectors are used together for a loop-through connection, set the switch to OFF.

17 R/G/B BKG (background) controls

Used for adjusting the white balance of the background.

18 R/G/B DRIVE controls

Used for adjusting the white balance at the white peak.

19 TALLY connector (4-pin DIN)

Connect to the tally output of a control console, special-effects generator, etc. The tally light on the front panel will be turned on or off by the connected console or special-effects generator.

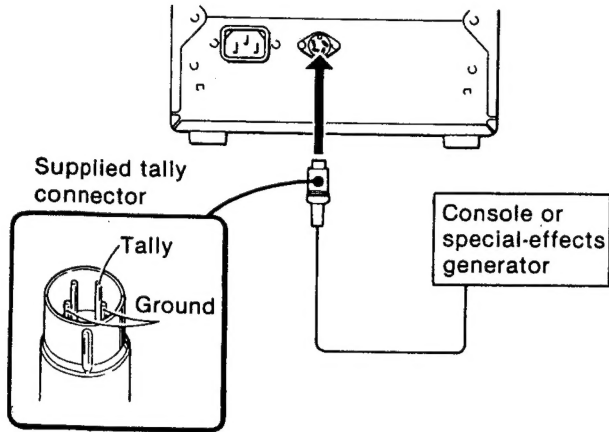
20 AC IN socket

Connect the supplied ac power cord.

TALLY CONNECTOR

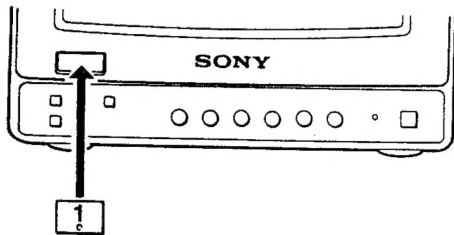
To utilize the tally-light feature of this monitor, connect the TALLY connector at the rear of the monitor to a control console, special-effects generator, etc. using the supplied tally connector. The No.1 (ground) and No.2 (tally) pins should be connected to the corresponding pins of the tally out connector.

The tally light on the front panel will be turned on or off by operating the console or special-effects generator.



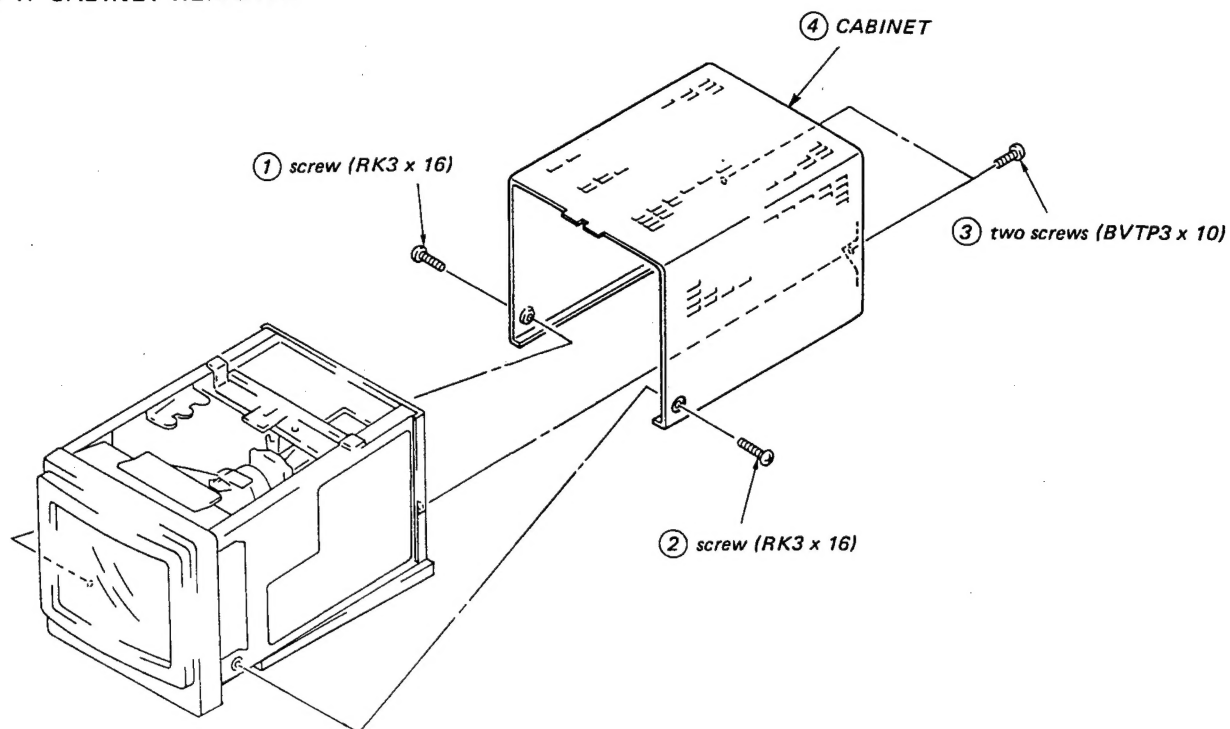
How to use the supplied number plate

To identify the monitor in your system, insert the supplied number plate under the tally light cover. When the tally light lights, the number will be illuminated.

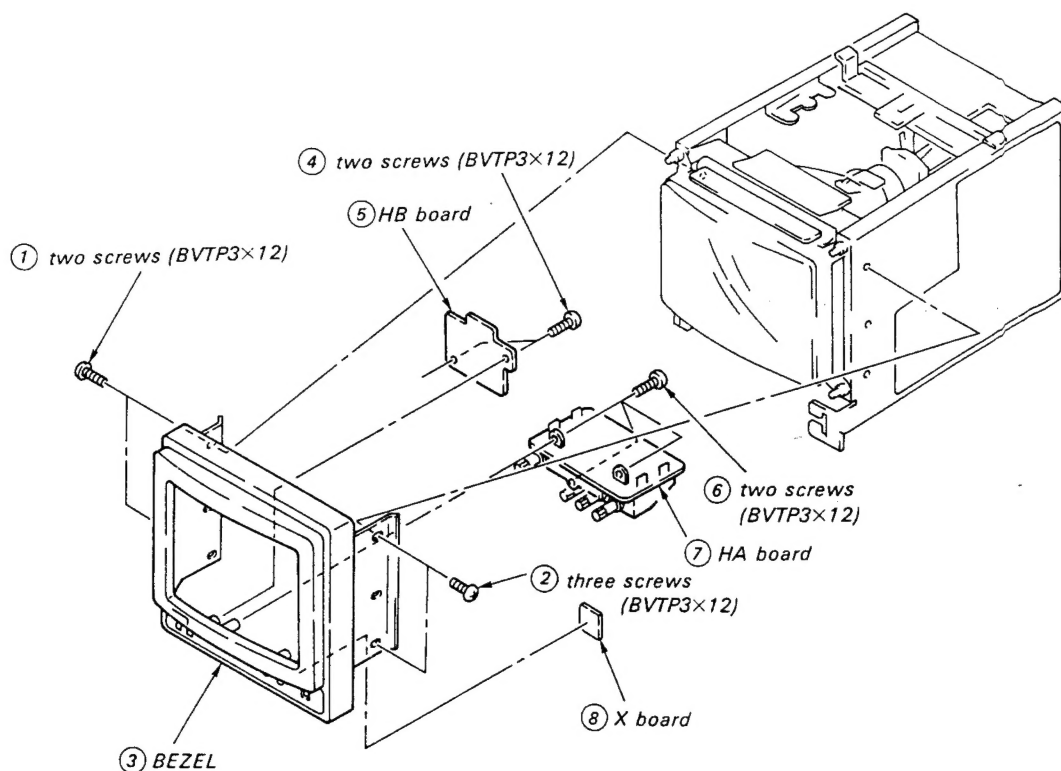


SECTION 2 DISASSEMBLY

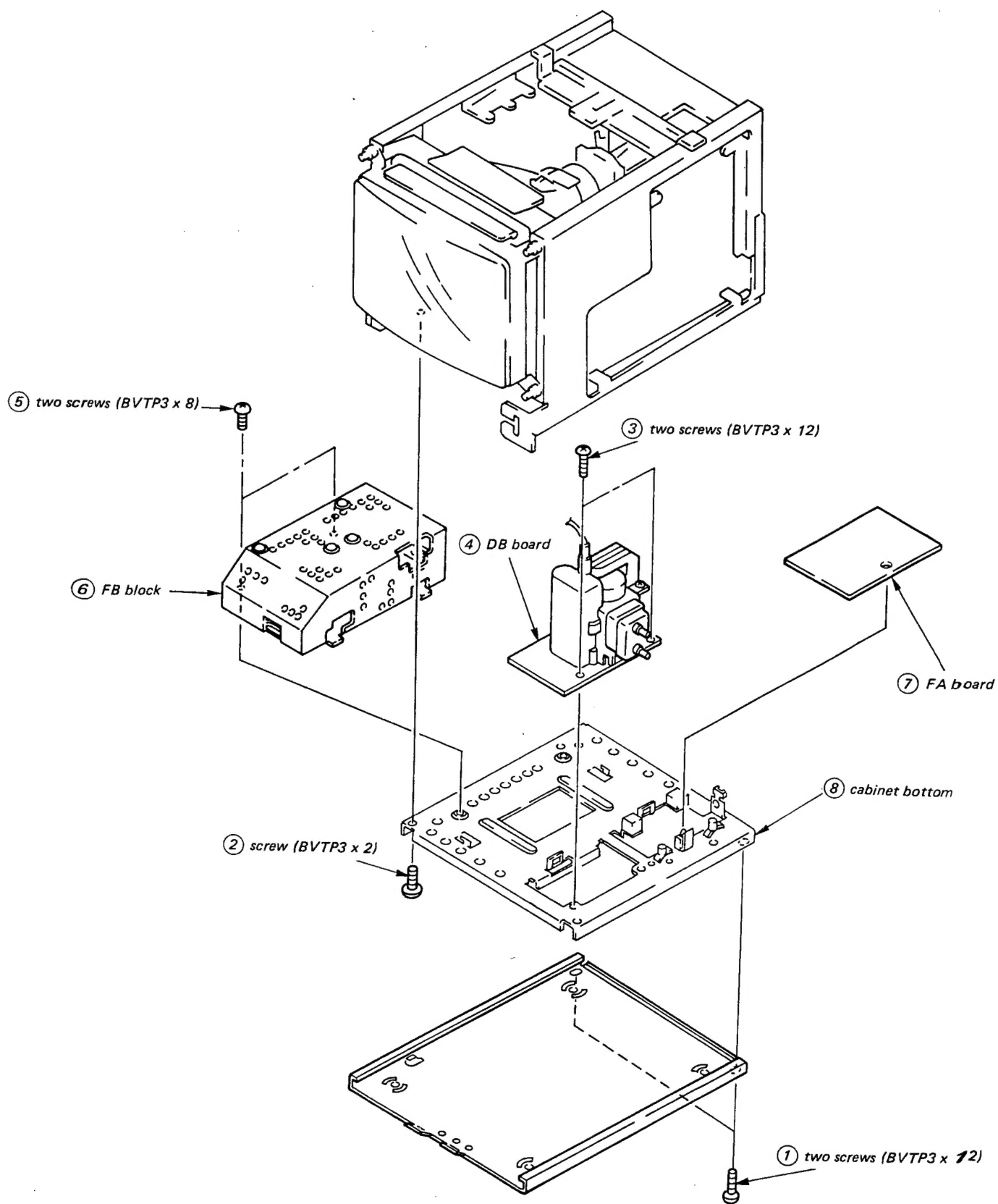
2-1. CABINET REMOVAL



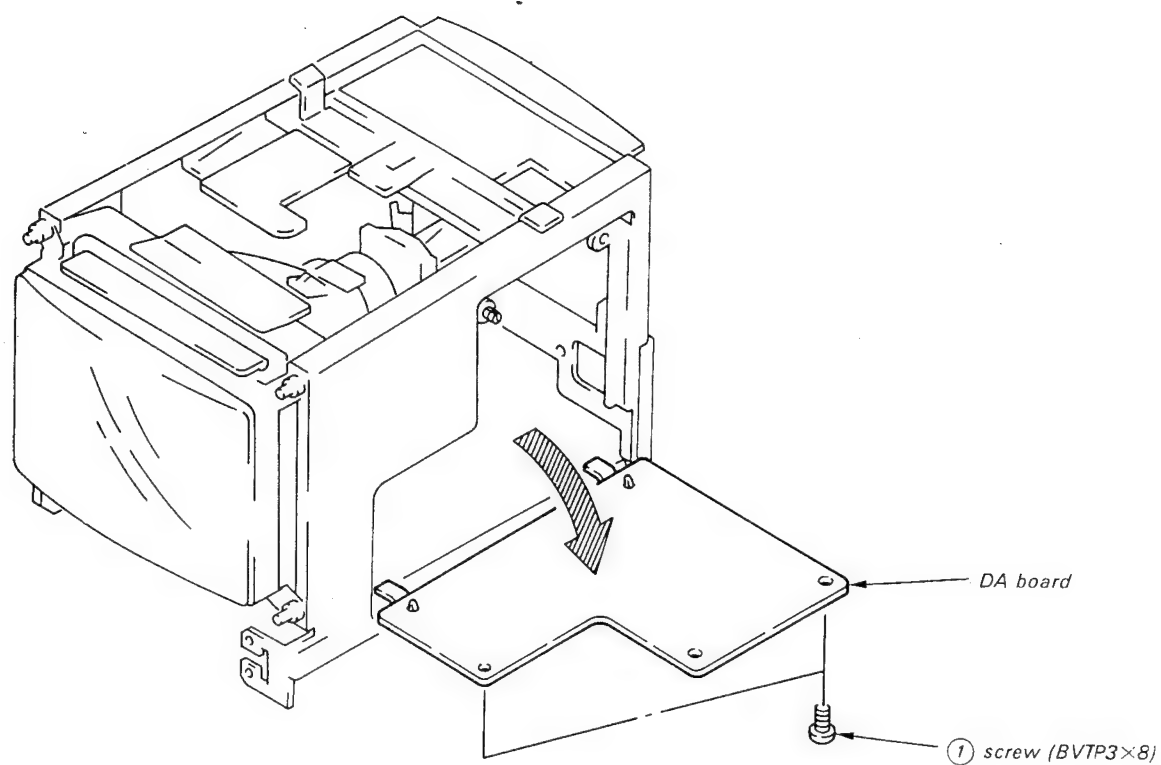
2-2. BEZEL REMOVAL (HA, HB, X BOARD)



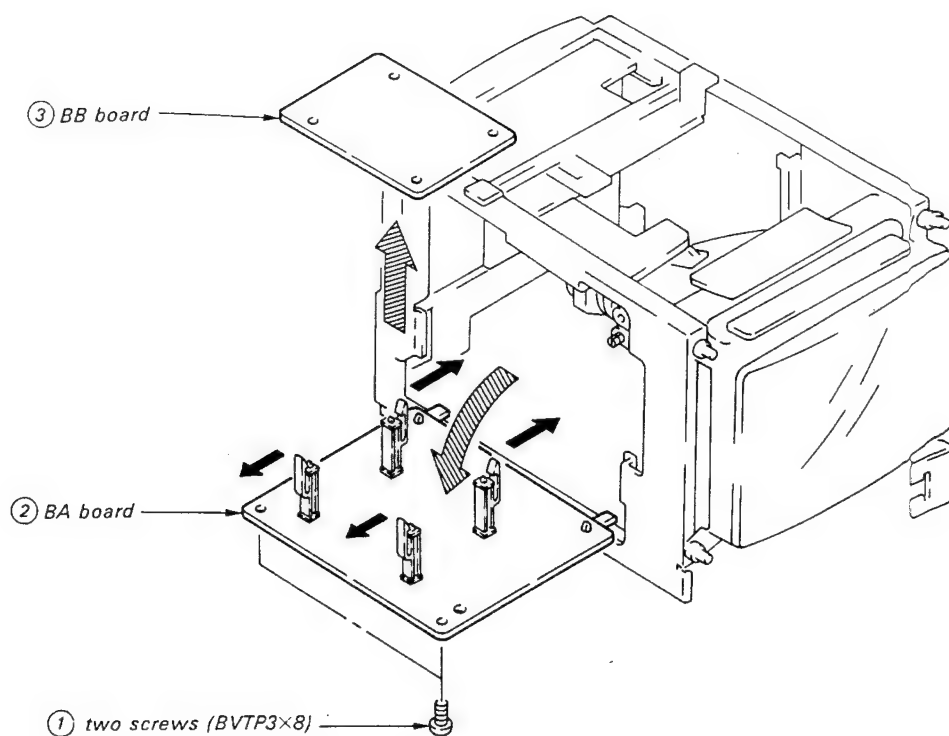
2-3. CABINET BOTTOM REMOVAL



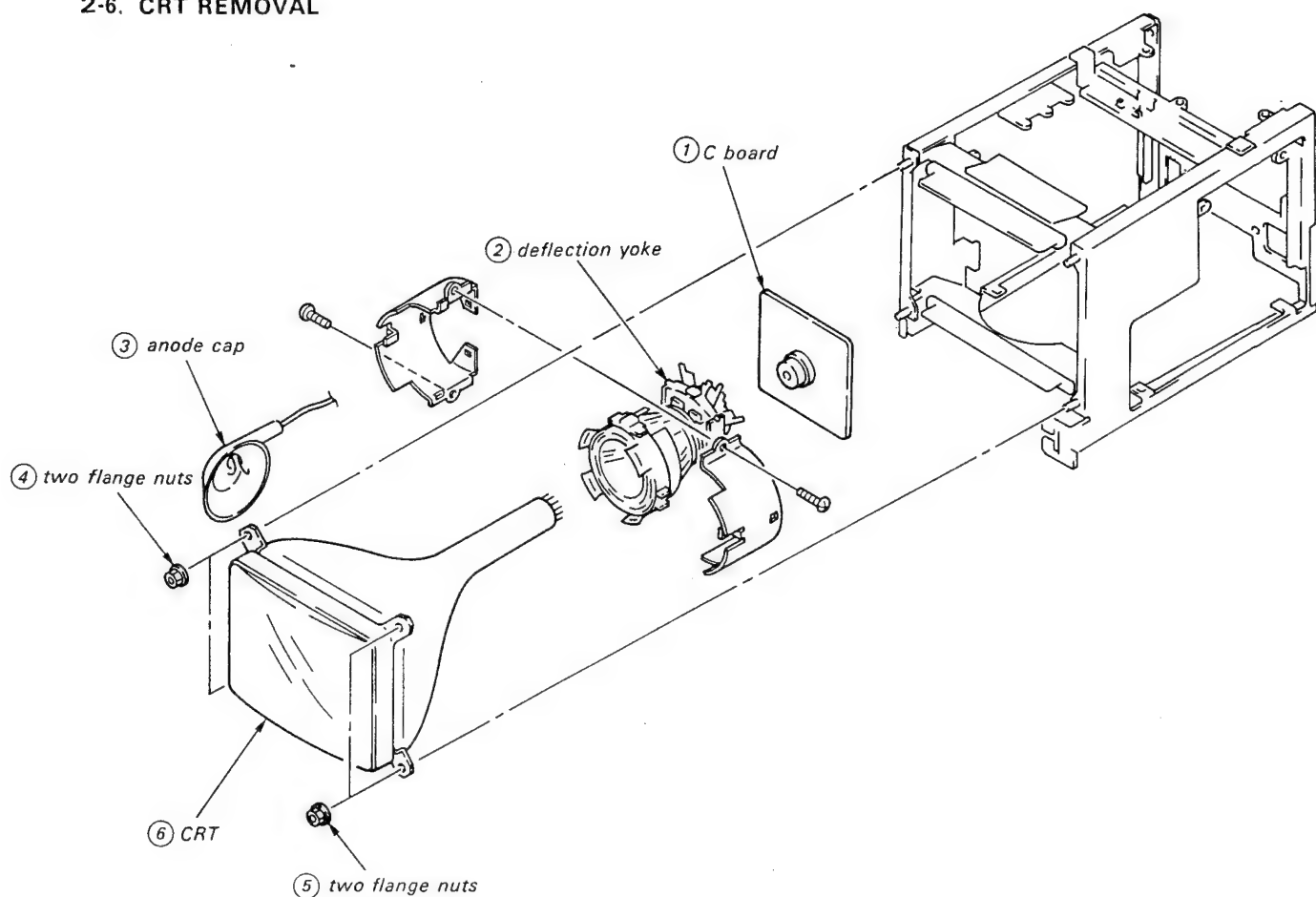
2-4. DA BOARD REMOVAL



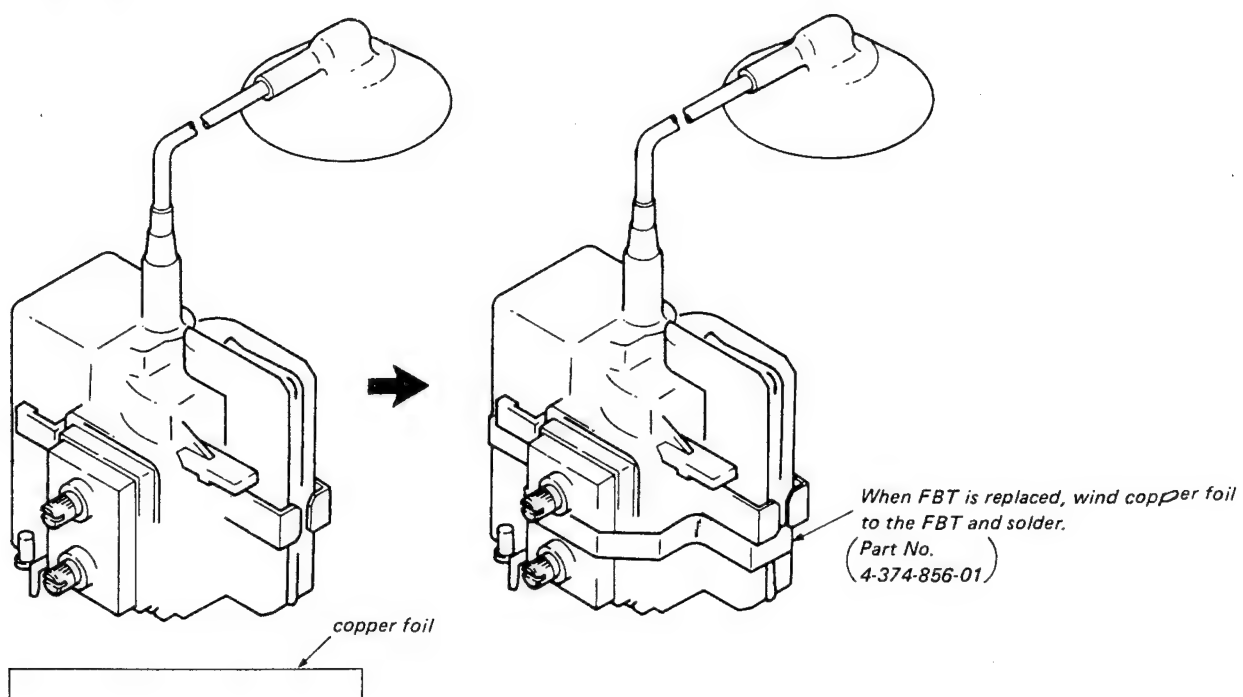
2-5. BA, BB BOARD REMOVAL



2-6. CRT REMOVAL



2-7. REPLACING FBT



SECTION 3 SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

Controls and switch should be set as follows unless otherwise noted:

BRT, CONTR controls..... fully clockwise

Make the following adjustments in the order as follows given:

- 3-1. Beam Landing
- 3-2. Focus Adjustment
- 3-3. Convergence
- 3-4. White Balance

Note: Test Equipment Required

1. Color-bar/pattern generator
2. Degausser

3-1. BEAM LANDING

Preparation:

- Before starting, degauss the entire screen.
- 1. Loosen deflection yoke screw.
- 2. Remove deflection yoke spacers.
- 3. Adjust purity control to center the slide between two projections as shown in Fig. 1-1.
- 4. Slide deflection yoke as far forward as it will go.
- 5. Turn RED CUT OFF VR (RV259) MAX and GREEN (RV261) and BLUE CUT OFF RV (RV263) MIN.
- 6. Turn purity control to center vertical red band as shown in Fig. 1-2.
- 7. Slide deflection yoke back for a uniform red screen.
- 8. Check green and blue rasters for uniformity. Repeat the steps 6, 7 and 8.
- 9. Turn all CUT OFF VR (RV259, 261, 263) for mechanical CENTER.
- 10. Install the deflection yoke spacers.
- 11. Tighten the deflection yoke screw.
- 12. Check if mislanding appears at corners a-d as shown in Fig. 1-3. If mislanding is observed, correct it as shown in Fig. 1-4.

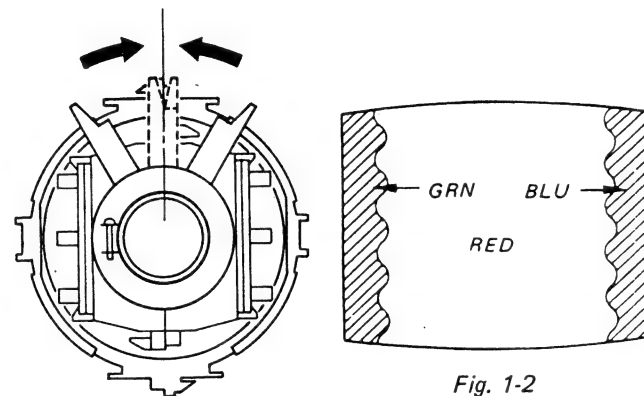


Fig. 1-1

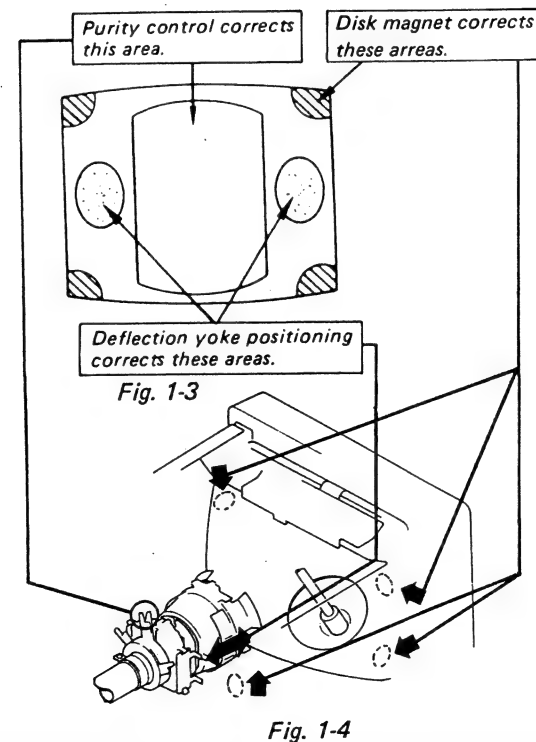
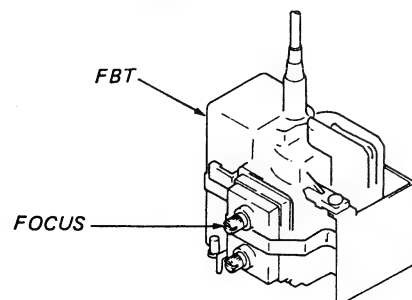


Fig. 1-3

Fig. 1-4

3-2. FOCUS ADJUSTMENT

- (1) Input monoscope signal.
PICTURE control..... 80%
BRICHT control..... 50%
- (2) Adjust FOCUS control for a best picture at the center and both sides of the screen.



3-3. CONVERGENCE

Preparation:

- Before starting, make FOCUS, H.SIZE, V.SIZE and V.LIN adjustments.
- Turn BRT control fully counterclockwise.
- Feed in the dot pattern.

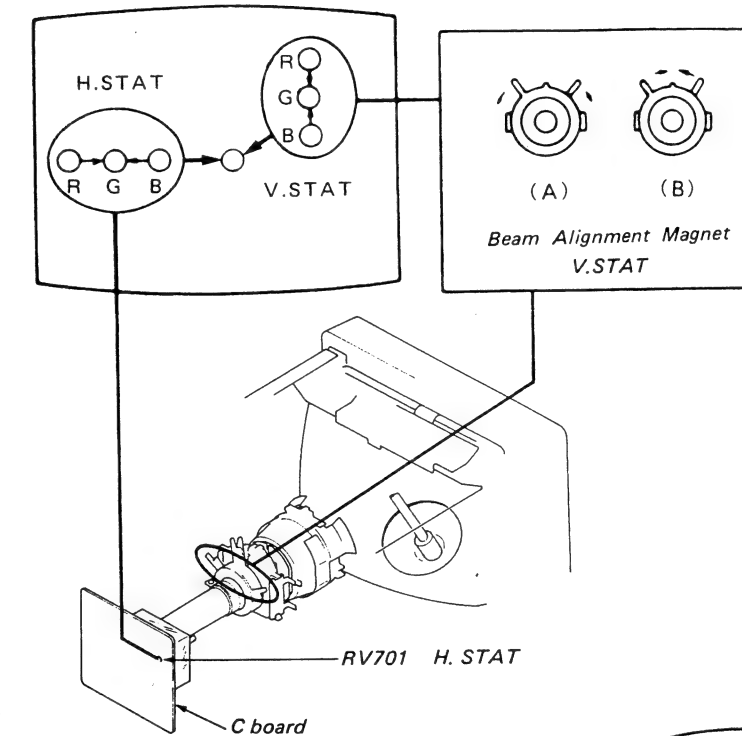
- (1) Horizontal Static Convergence and Vertical Static Convergence

If blue dot does not coincide with red and green dots.

Move BMC magnet to correct insufficient H.Static convergence.

Rotate BMC magnet to correct insufficient V.static convergence.

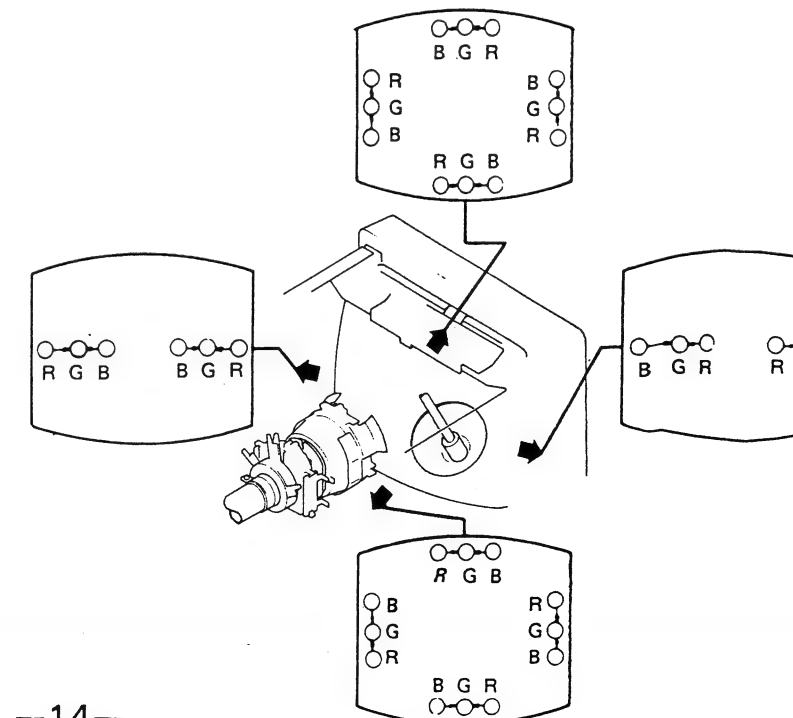
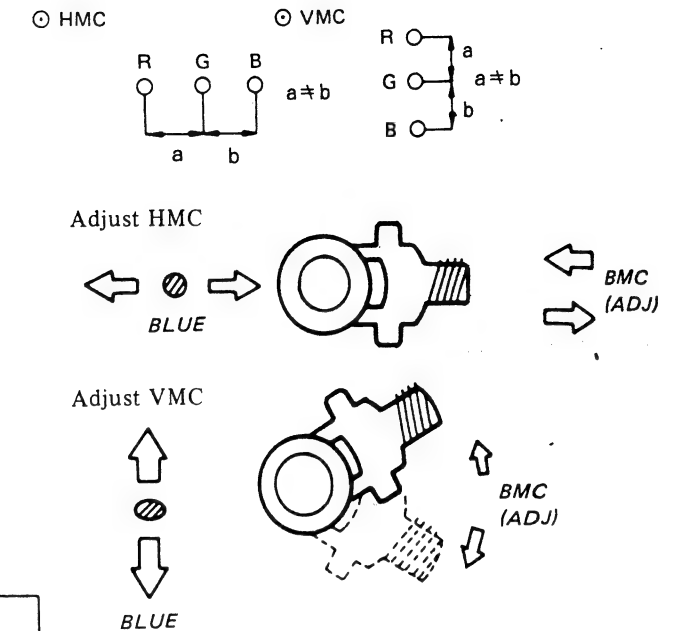
In either case, repeat Beam Landing Adjustment.



- (2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.
- 1. Loosen deflection yoke screw.
- 2. Remove deflection yoke spacers.
- 3. Move the deflection yoke for best convergence as shown below.
- 4. Tighten the deflection yoke screw.
- 5. Install the deflection yoke spacers.



3-3. CONVERGENCE

Preparation:

- Before starting, make FOCUS, H.SIZE, V.SIZE and V.LIN adjustments.
- Turn BRT control fully counterclockwise.
- Feed in the dot pattern.

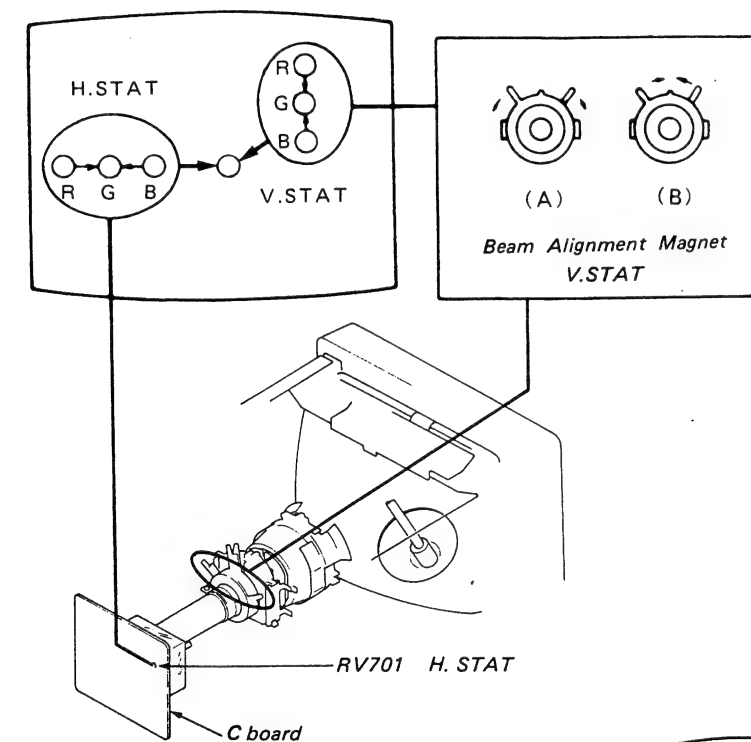
(1) Horizontal Static Convergence and Vertical Static Convergence

If blue dot does not coincide with red and green dots,

Move BMC magnet to correct insufficient H.Static convergence.

Rotate BMC magnet to correct insufficient V.static convergence.

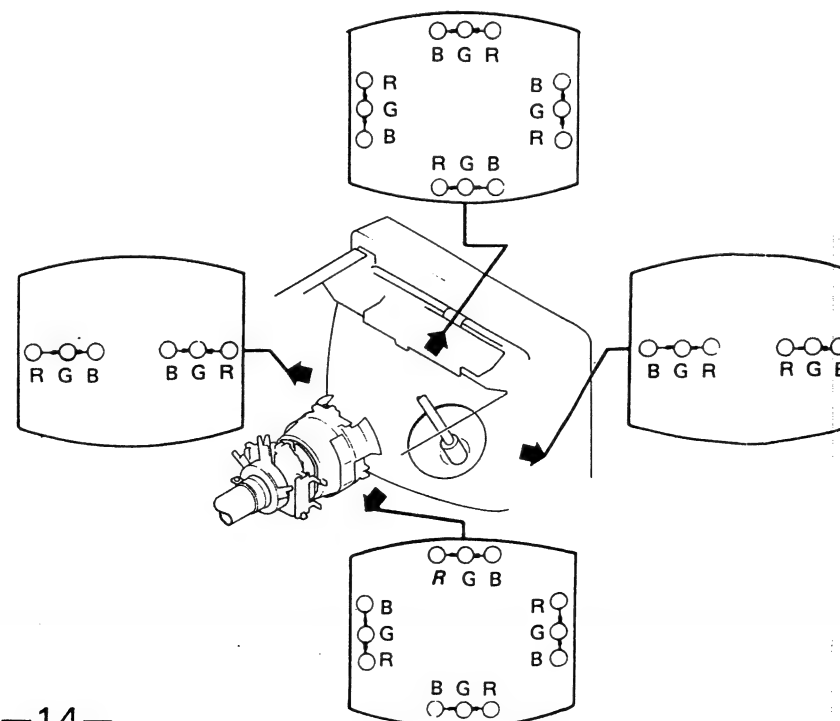
In either case, repeat Beam Landing Adjustment.



(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.
1. Loosen deflection yoke screw.
 2. Remove deflection yoke spacers.
 3. Move the deflection yoke for best convergence as shown below.
 4. Tighten the deflection yoke screw.
 5. Install the deflection yoke spacers.



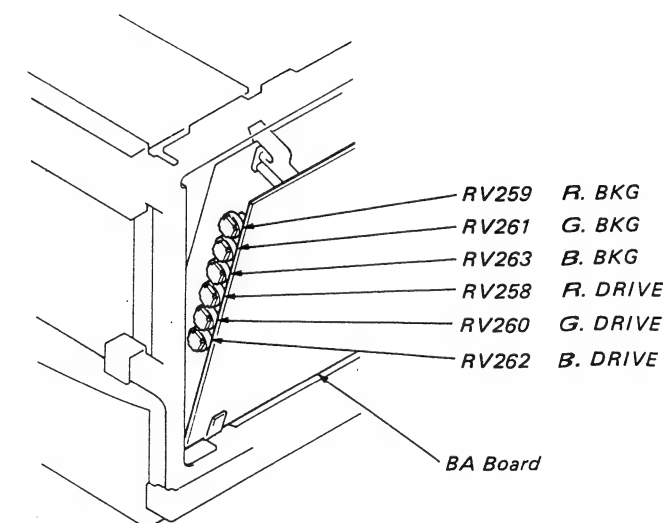
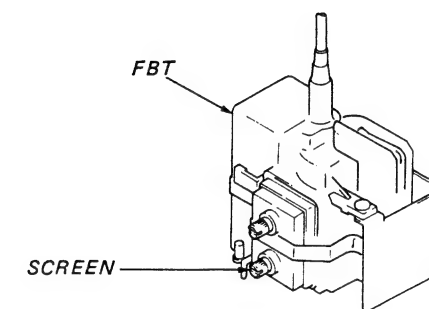
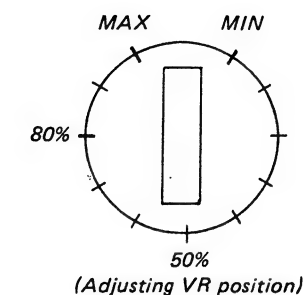
3-4. WHITE BALANCE

(1) SCREEN (G2)

1. Input a dots pattern.
2. Set the PICTURE control at minimum and turn the BRIGHT control fully counterclockwise.
3. Confirm that BKG voltage is less than 105V dc when turning RV259 (R.BKG), RV261 (G.BKG) and RV263 (B.BKG).
4. Note the color which becomes visible first when turning SCREEN VR.

(2) WHITE BALANCE

1. Input a cross-hatch pattern.
2. Set the PICTURE control to minimum and turn the BRIGHT control click position.
3. Turn RV262 (B.DRIVE), RV260 (G.DRIVE) and RV258 (R.DRIVE) fully clockwise.
4. Set RV259 (R.BKG), RV261 (G.BKG) and RV263 (B.BKG) to minimum.
5. Turn RV509 (SUB BRT) slowly to obtain a faintly visible cross-hatch. Note the color that first becomes visible by turning. Do not turn a BKG control for this color.
6. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch. Set the PICTURE control to maximum and turn the BRIGHT control fully clockwise. Observe the screen and adjust the DRIVE controls for best white balance.
7. Repeat steps 1. through 6. several times.



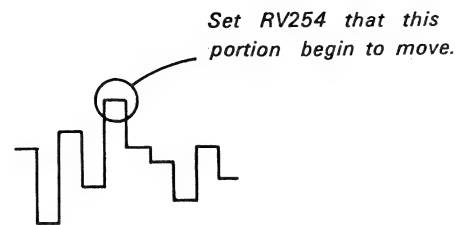
SECTION 4

CIRCUIT ADJUSTMENTS

4-1. BA BOARD ADJUSTMENTS

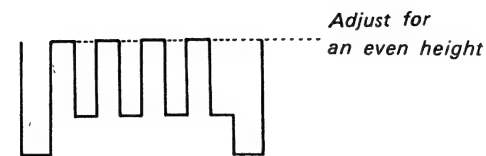
HUE BIAS ADJUSTMENT

1. Input a color bar signal.
PICTURE 80%
BRT 50%
2. Connect an oscilloscope to pin ③ of the BA-6
3. Turn RV254 fully counterclockwise, then slowly return RV254 until the waveform at pin ③ of BA-6 connector begin to change.



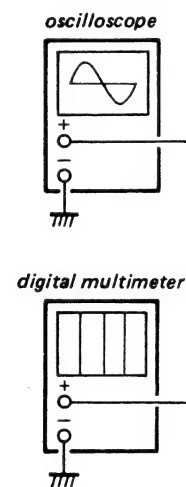
SUB COLOR ADJUSTMENT

1. Input a color bar signal.
PICTURE 80%
BRT 50%
COLOR 50%
2. Adjust RV264 for the waveform at connector BA-6 ③ to become as illustrated.



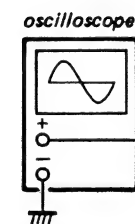
APC ADJUSTMENT

1. Input a color bar signal.
PICTURE 80%
BRT 50%
COLOR 50%
2. Connect a 100 kΩ resistor between IC253 pin ⑬ and ground. (Killor circuit goes off)
3. Ground IC253 pin ⑮ with a 10μ/16V chemical capacitor and remove color sync.
4. Adjust RV256 to get color sync.



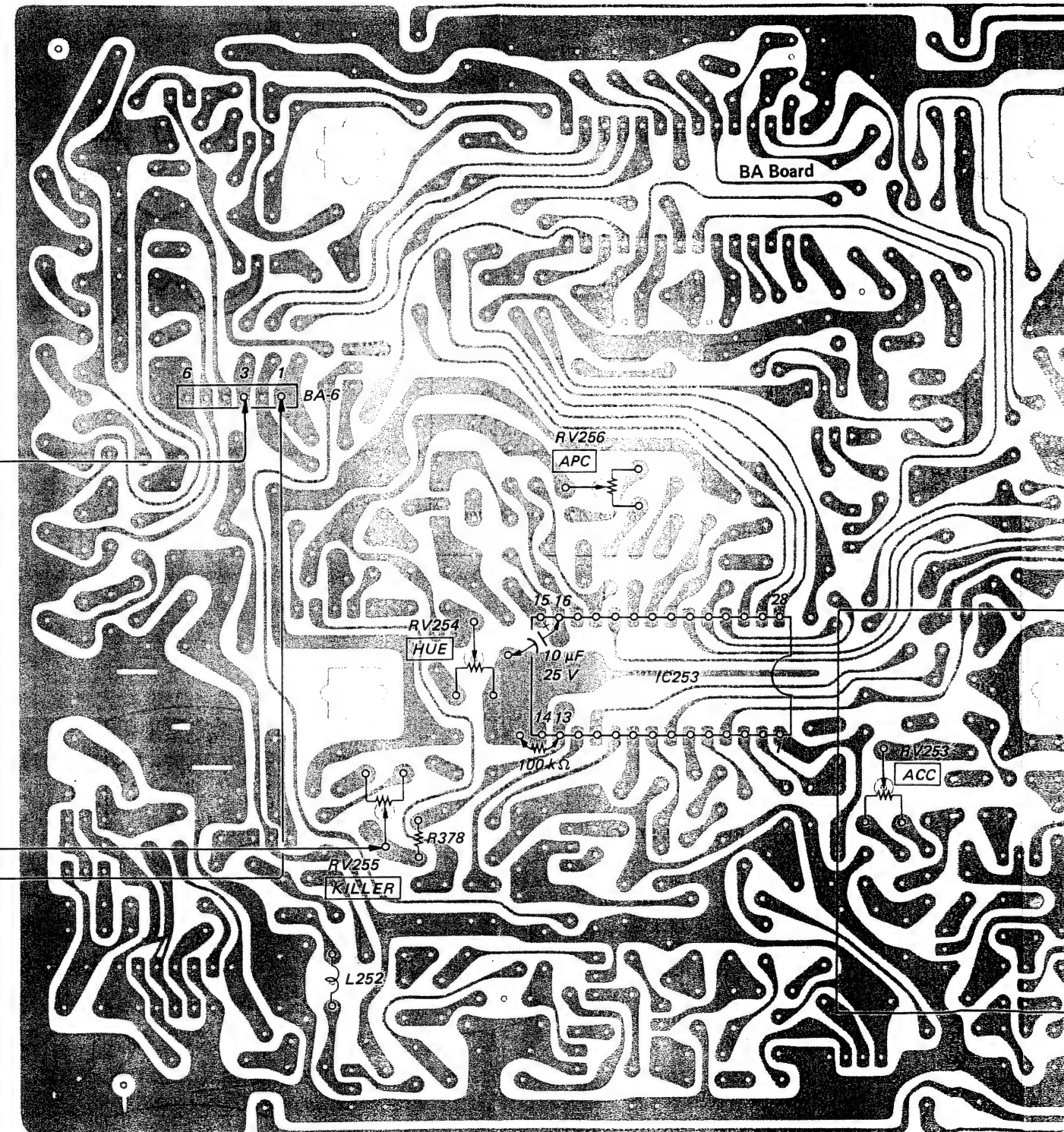
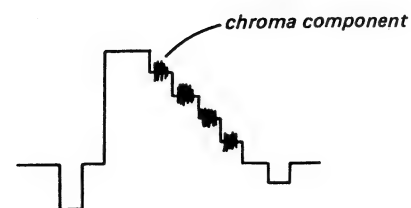
KILLER POINT ADJUSTMENT

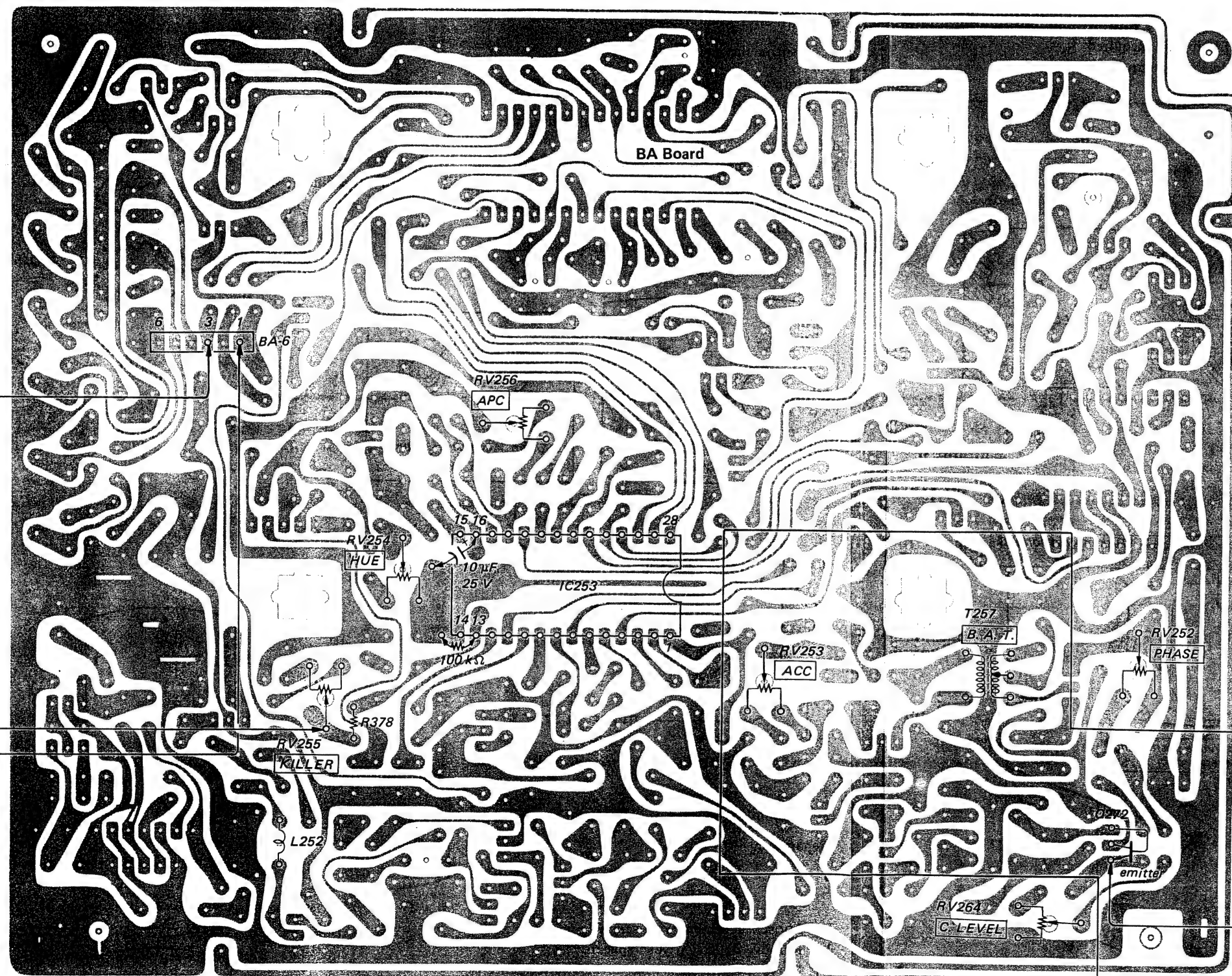
1. Tune in an off-air signal.
2. Connect digital multimeter between R255 and R378.
3. Adjust RV255 so that the voltage is 8.3V dc.



CHROMA TRAP ADJUSTMENT

1. Input a color bar signal.
PICTURE 80%
BRT 50%
2. Observe connector BA-6 pin ① waveform on the oscilloscope and adjust L252 for minimum chroma component.



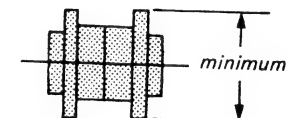


HUE ADJUSTMENT

1. Input a color bar signal.
 PICTURE 80%
 BRT 50%
 COLOR 50%
2. Set RV505 (user control HUE VR) at mechanical center.
3. Adjust RV252 so that the hue is optimized.

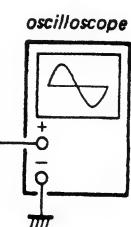
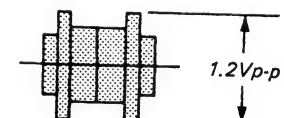
BAT ADJUSTMENT

1. Input a color bar signal.
 PICTURE 80%
 BRT 50%
 COLOR 50%
2. Observe Q272 (E) waveform on the oscilloscope and adjust T257 for minimum chrome component.

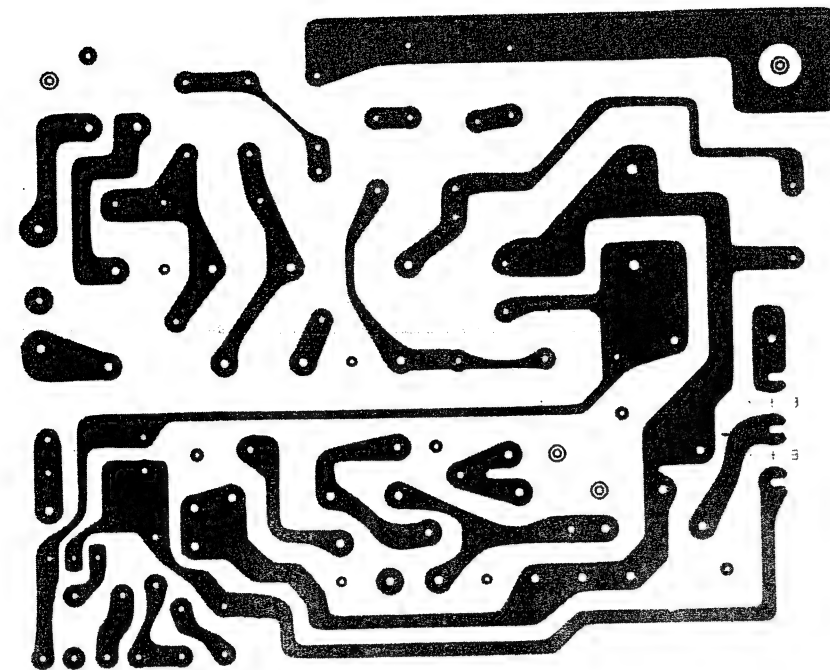


ACC ADJUSTMENT

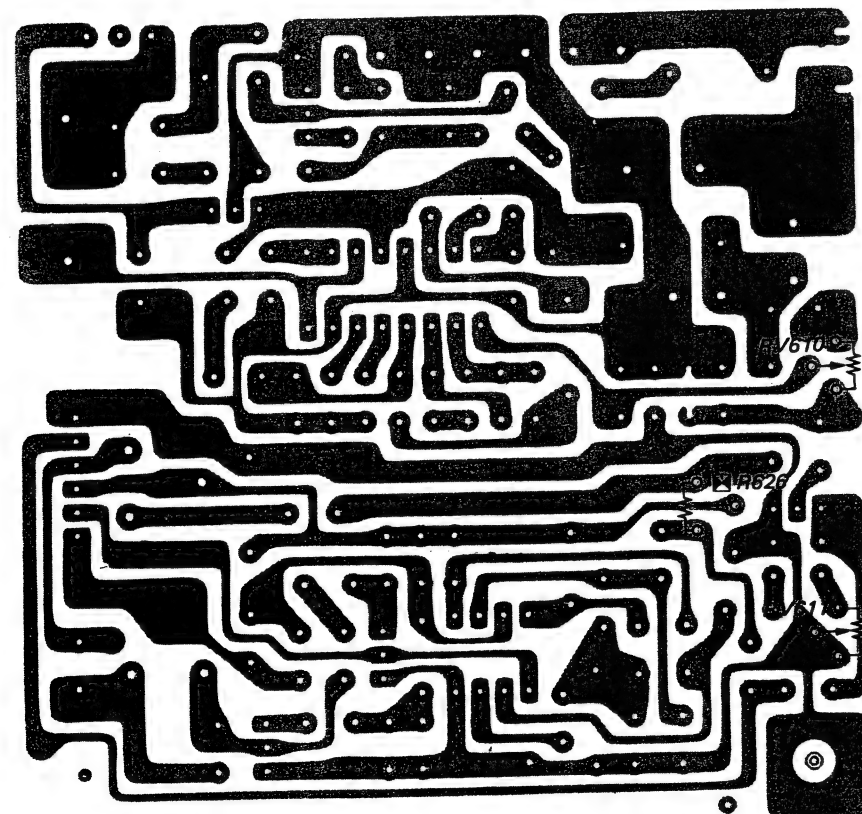
1. Input a color bar signal.
 PICTURE 80%
 BRT 50%
 COLOR 50%
2. Observe Q272 (E) waveform on the oscilloscope and adjust RV253 so that the signal component is 1.2 Vp-p.



4.2. SAFETY RELATED ADJUSTMENTS



FB Board


**+B MAX CHECK -
☒ R626 ADJUSTMENT**

Be sure to perform this adjustment when replacing the following parts (marked ☒ on the schematic)

☒ R619, R620, R626, R627, R628, RV610, D626, IC611

1. Input a monoscope signal. (PICTURE 80% BRT 50%)
2. Turn +B ADJ VR (RV807) fully so that +B value is maximum. (Input of 130V ± 2 V AC)
3. Confirm that TP91 value is less than 31.5V dc.

**HV PROTECTOR OPERATION CHECK
 HOLD DOWN ☒ R856 ADJUSTMENT**

Be sure to perform this adjustment when replacing the following parts (marked ☒ on the schematic)

☒ R807, R818, R822, R826, R855, R856, R873, R874, R876, D800, D805, D824, D825, IC802, C807, C855

1. Input a monoscope signal. (PICTURE 80% BRT 50%)
2. Confirm that voltage of 19.6 ± 1.6 V appears between TP61 and GND during input of 120V AC.
3. Confirm that the HOLD-DOWN circuit operates (the raster disappears) by adding 25.0V DC between TP61 and GND.

**BLANKING OPERATION CHECK
☒ R859 ADJUSTMENT**

Be sure to perform this adjustment when replacing the following parts (marked ☒ on the schematic)

☒ R456, R457, R807, R819, R820, R822, R859, R862, D800, D801, IC253, IC802

1. Input a monoscope signal. (PICTURE 80% BRT 50%)
2. Turn +B ADJ VR (RV807) fully so that +B value is DOWN.
3. Confirm that the BLANKING circuit operates (the raster disappears) by adding 24.5V DC between TP91 and GND.

POWER SUPPLY OPERATION CHECK

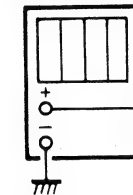
1. Input a monoscope signal.
 PICTURE 80%
 BRT 50%
 AC 120 V ± 2 V
2. Connect a digital voltmeter to connector DA-2.
3. Adjust RV610 for 30.5~31.5 V ± 0.2 V DC.

4.3. DA BO

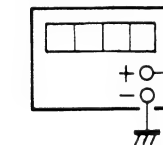
H.SIZE ADJ

1. Input a PICTURE BRT
2. Set the H.SIZE

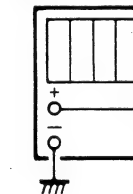
digital multimeter



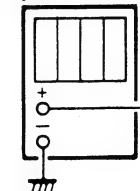
DC power supply



digital multimeter



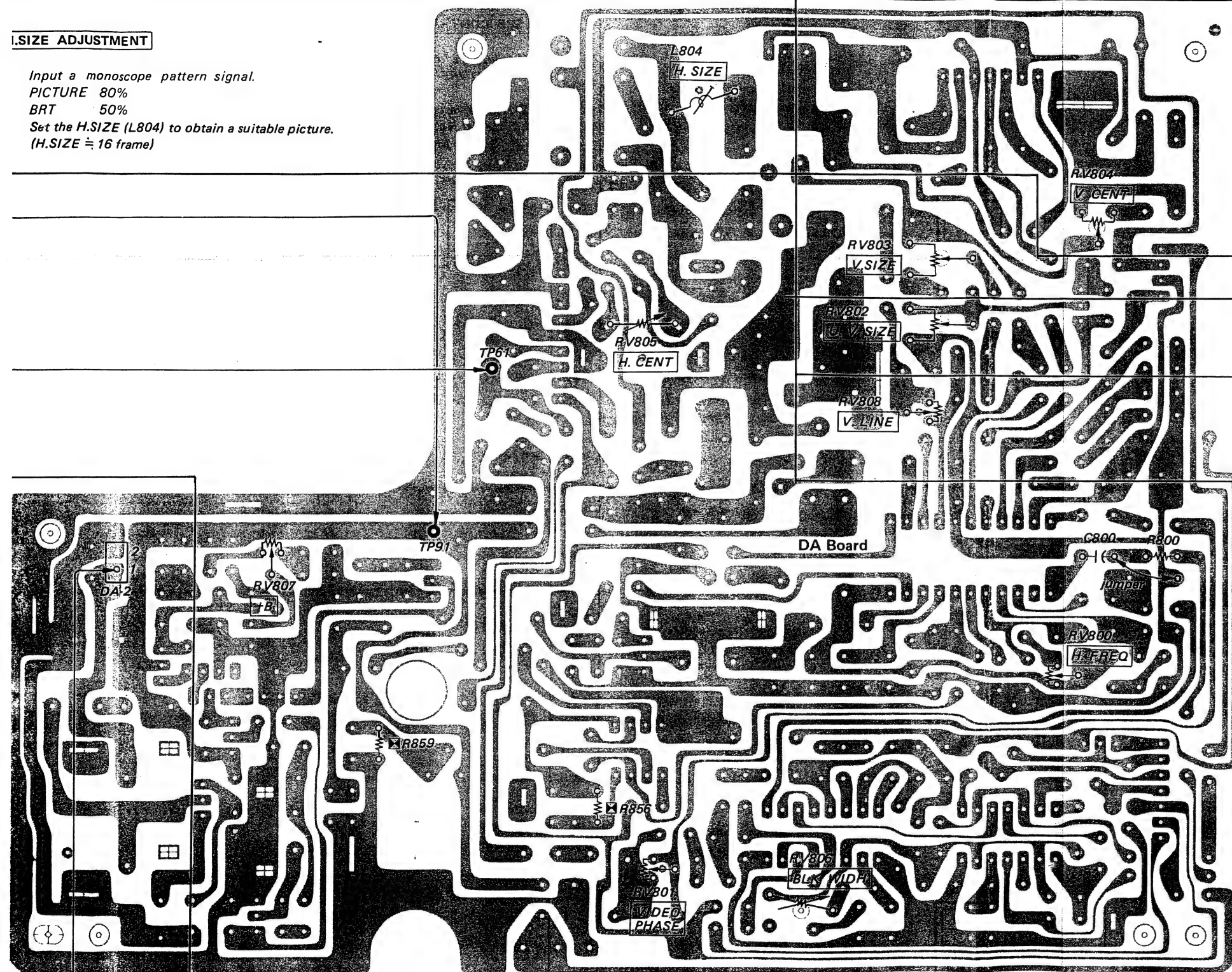
digital multimeter



3. DA BOARD ADJUSTMENTS

H.SIZE ADJUSTMENT

Input a monoscope pattern signal.
 PICTURE 80%
 BRT 50%
 Set the H.SIZE (L804) to obtain a suitable picture.
 (H.SIZE \approx 16 frame)

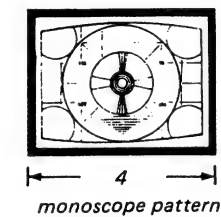


V. CENT ADJUSTMENT

1. Input a monoscope pattern signal.
 PICTURE 80%
 BRT 50%
 Adjust with RV804 so that picture is cetered.

V. SIZE ADJUSTMENT

1. Input a monoscope pattern signal.
 PICTURE 80%
 BRT 50%
 Set the V.SIZE (RV803) to obtain a suitable picture.



UNDER-SCAN V. SIZE ADJUSTMENT

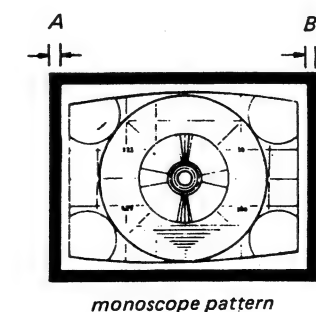
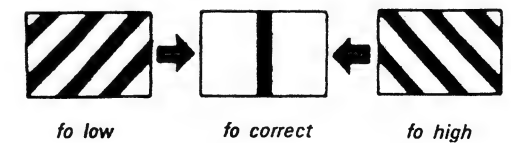
1. Input a monoscope pattern signal.
 PICTURE 80%
 BRT 50%
 SCAN UNDER
 Adjust UN V.SIZE (RV802) so that the monoscope pattern of H.SIZE and V.SIZE is 4:3.
 (V. SIZE \approx 11.75 frame)

V. LINE ADJUSTMENT

1. Input a monoscope pattern signal.
 PICTURE 80%
 BRT 50%
 Set the V.LIN (RV808) to obtain a suitable picture.

H. FREQ ADJUSTMENT

1. Input a monoscope pattern signal.
 PICTURE 80%
 BRT 50%
 Connect to ground C800 and R800 with Jumper.
 Adjust with RV800 (H.FREQ) as shown in figure.



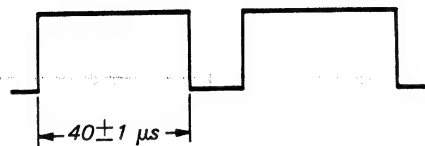
H BLANKING ADJUSTMENT

1. Input a monoscope pattern signal.
 PICTURE 80%
 BRT 50%
 SCAN UNDER
2. Adjust VIDEO PHASE (RV801) and H.BLK WIDTH (RV806) to be A=B, as shown in the figure.

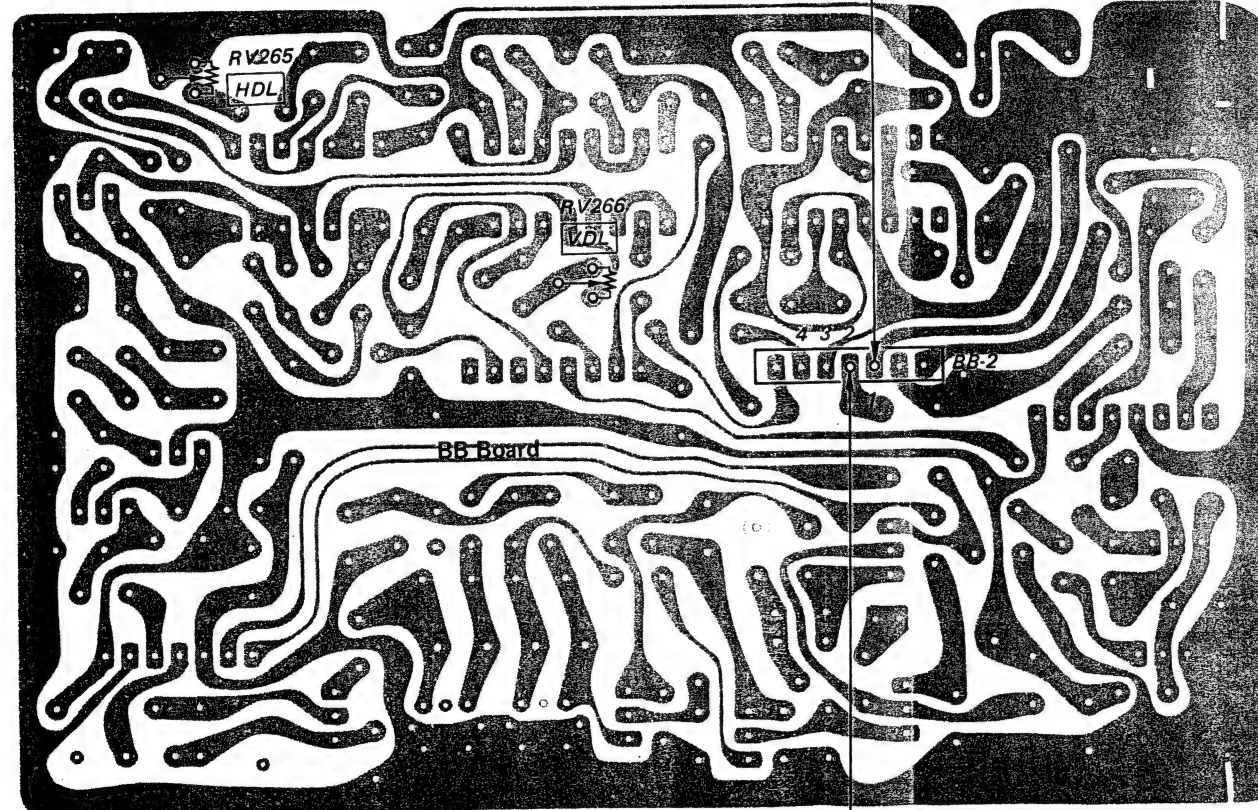
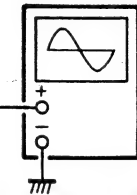
4-4. BB BOARD ADJUSTMENTS

1H DELAY ADJUSTMENT

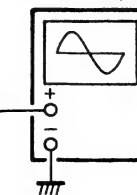
1. Input a color bar signal.
PICTURE 80%
BRT 50%
2. Observe the connector BB-2 pin ① waveform on the oscilloscope, and adjust RV265 for $40 \pm 1 \mu\text{s}$.



oscilloscope

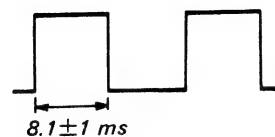


oscilloscope



V. DELAY ADJUSTMENT

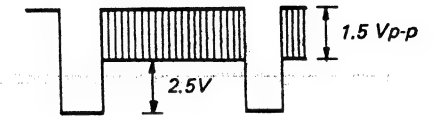
1. Input a color bar signal.
PICTURE 80%
BRT 50%
2. Observe the connector BB-2 pin ② waveform on the oscilloscope, and adjust RV266 for $8.1 \pm 1 \text{ ms}$.



4-5. HA BOARD ADJUSTMENT

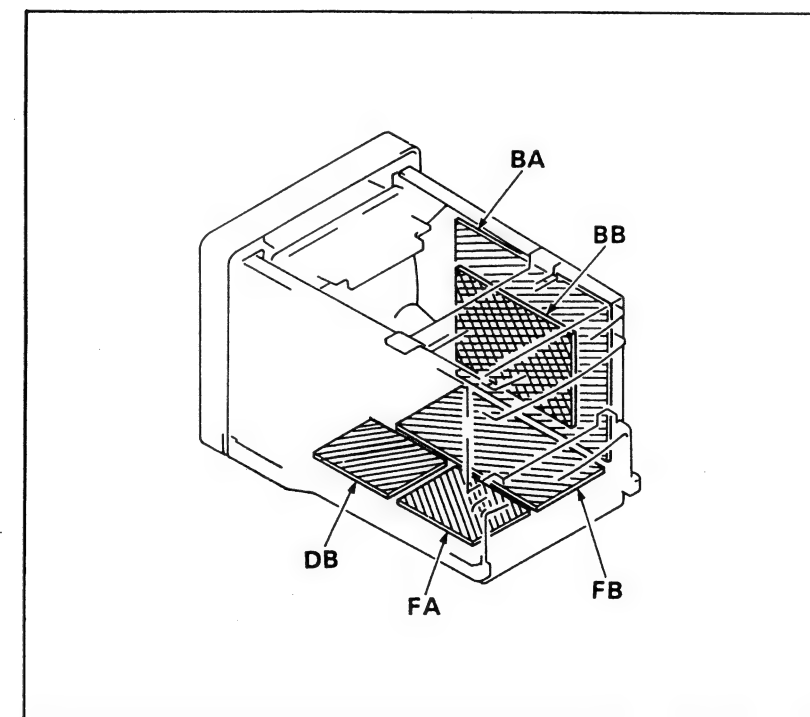
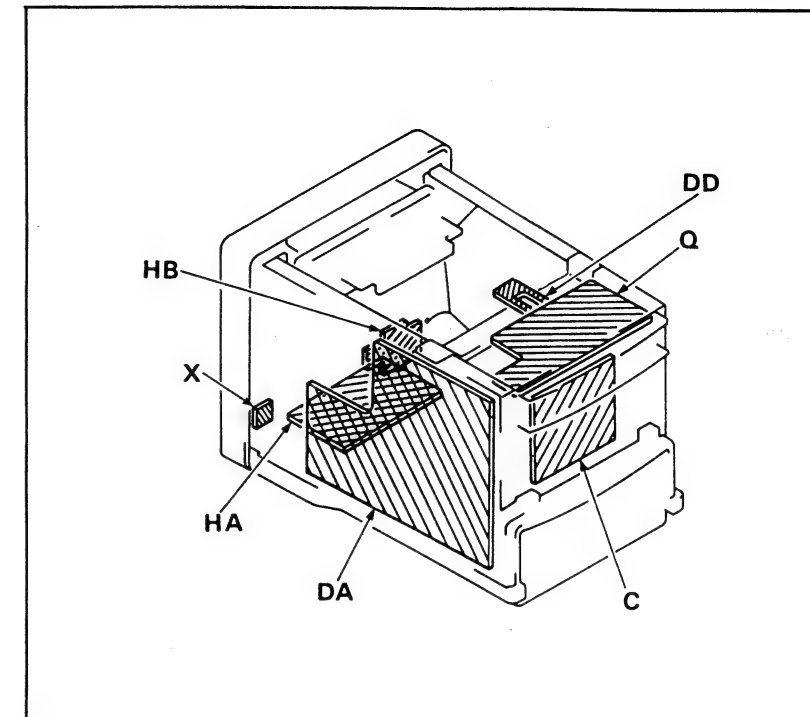
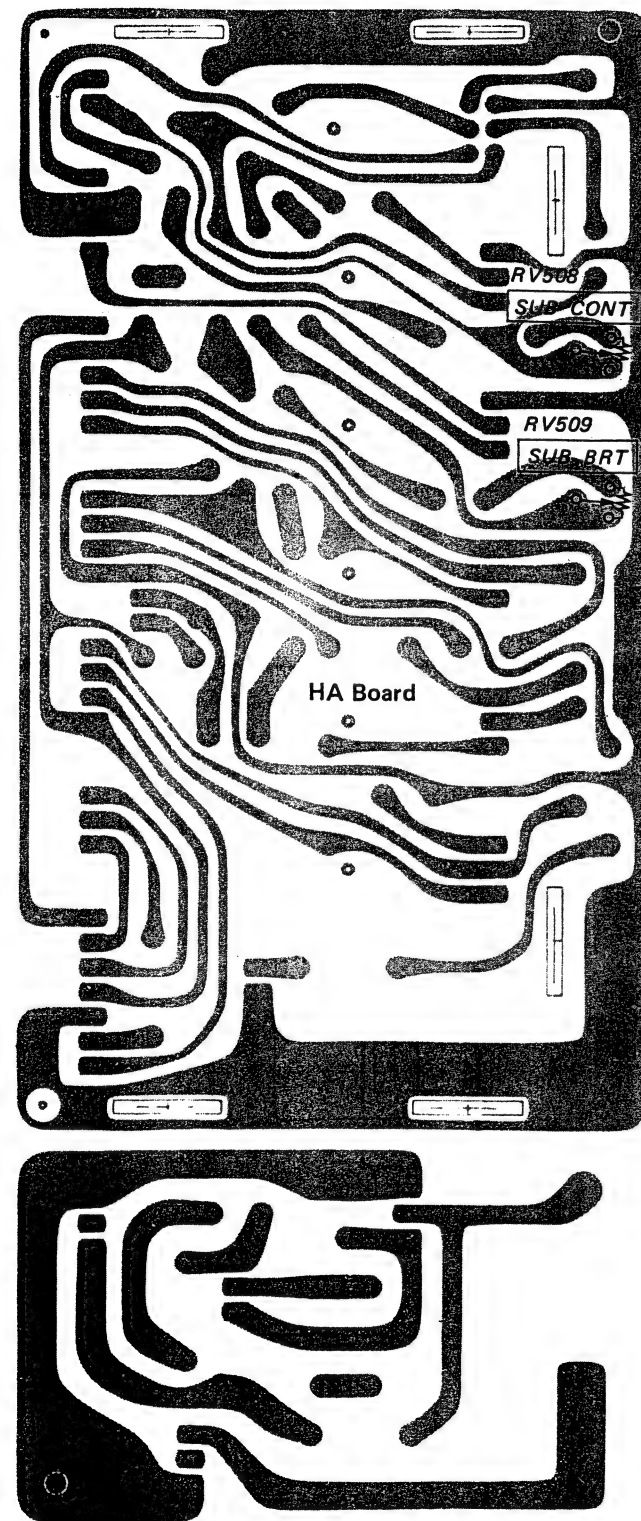
SUB CONTRAST ADJUSTMENT

1. Input a monoscope pattern signal.
PICTURE 100%
BRT 50%
2. Observe connector C-1 pin ③ on the oscilloscope and adjust RV508.
So that the signal component is 1.5 Vp-p .

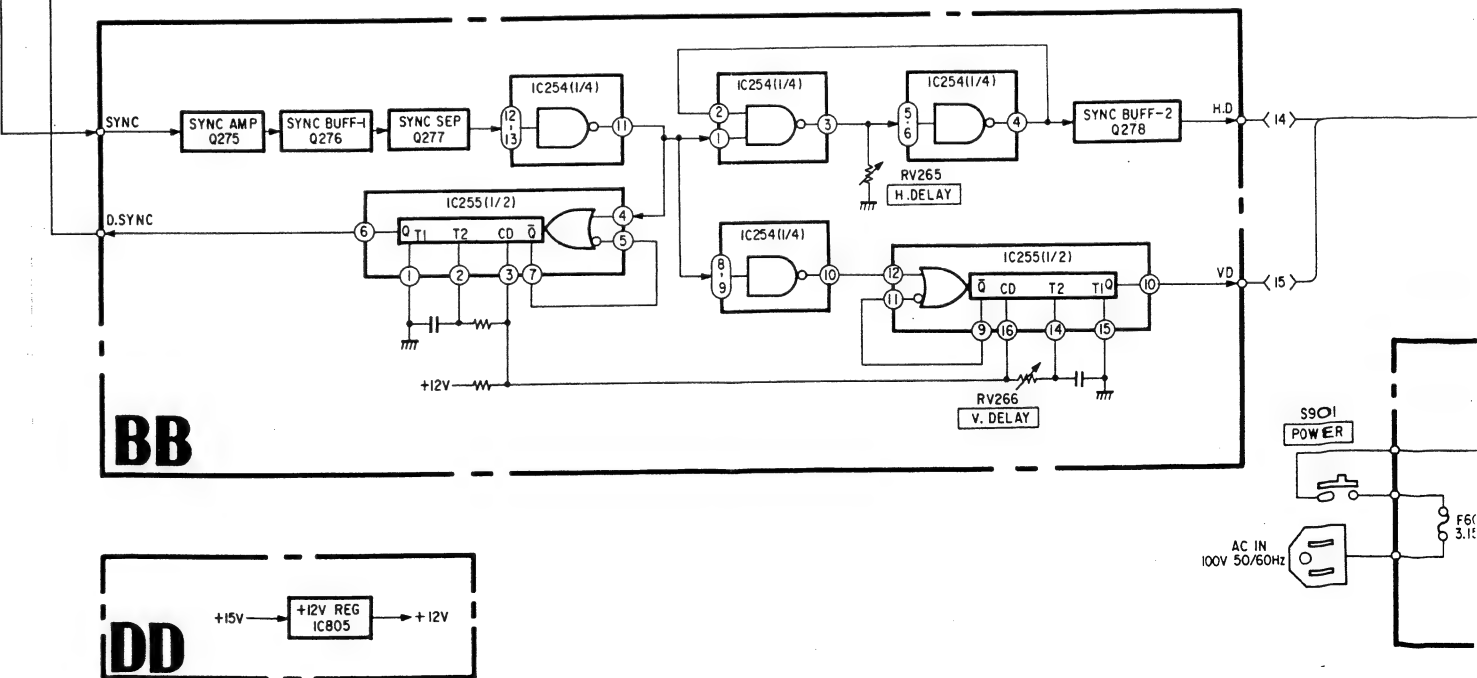
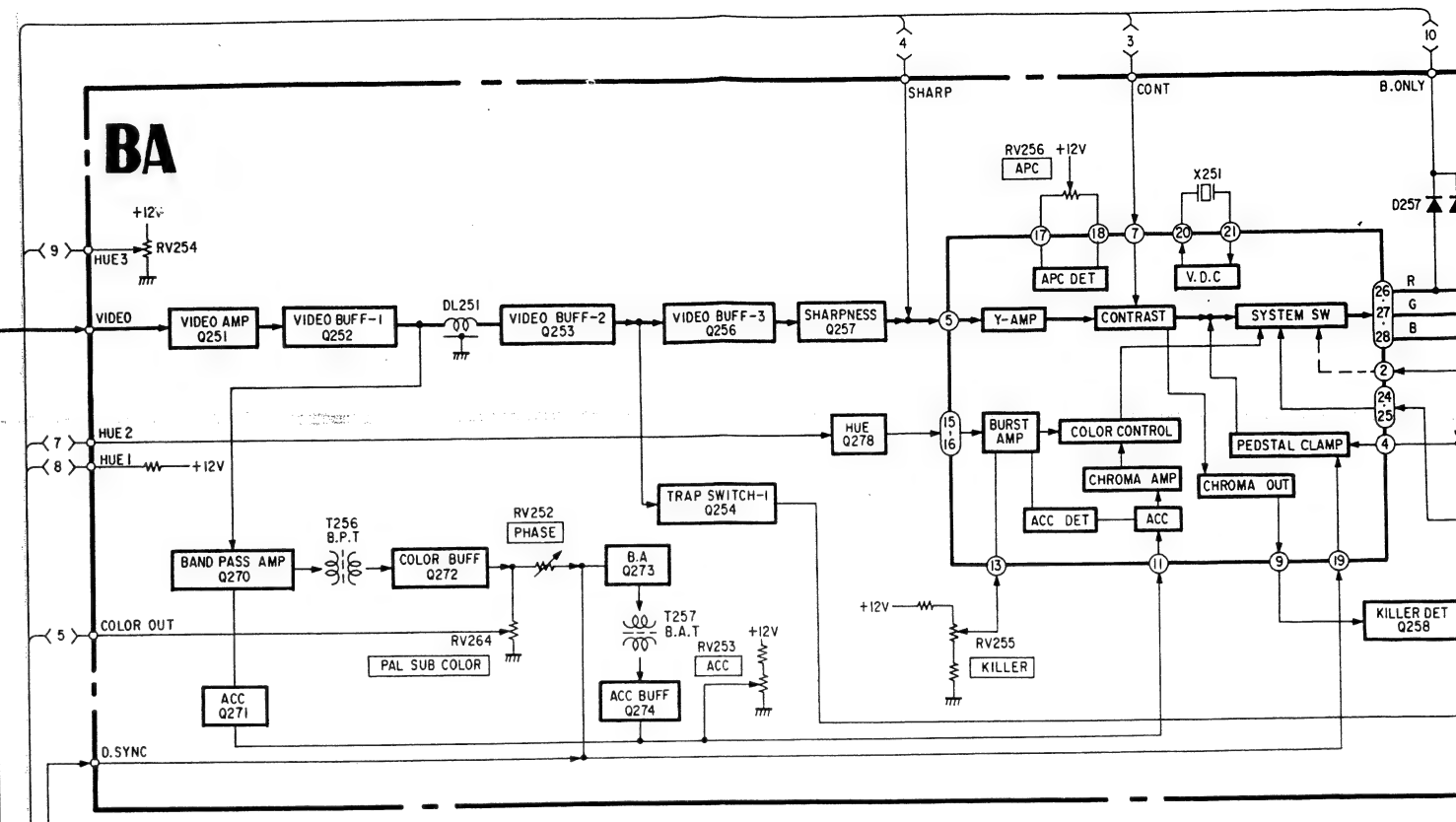
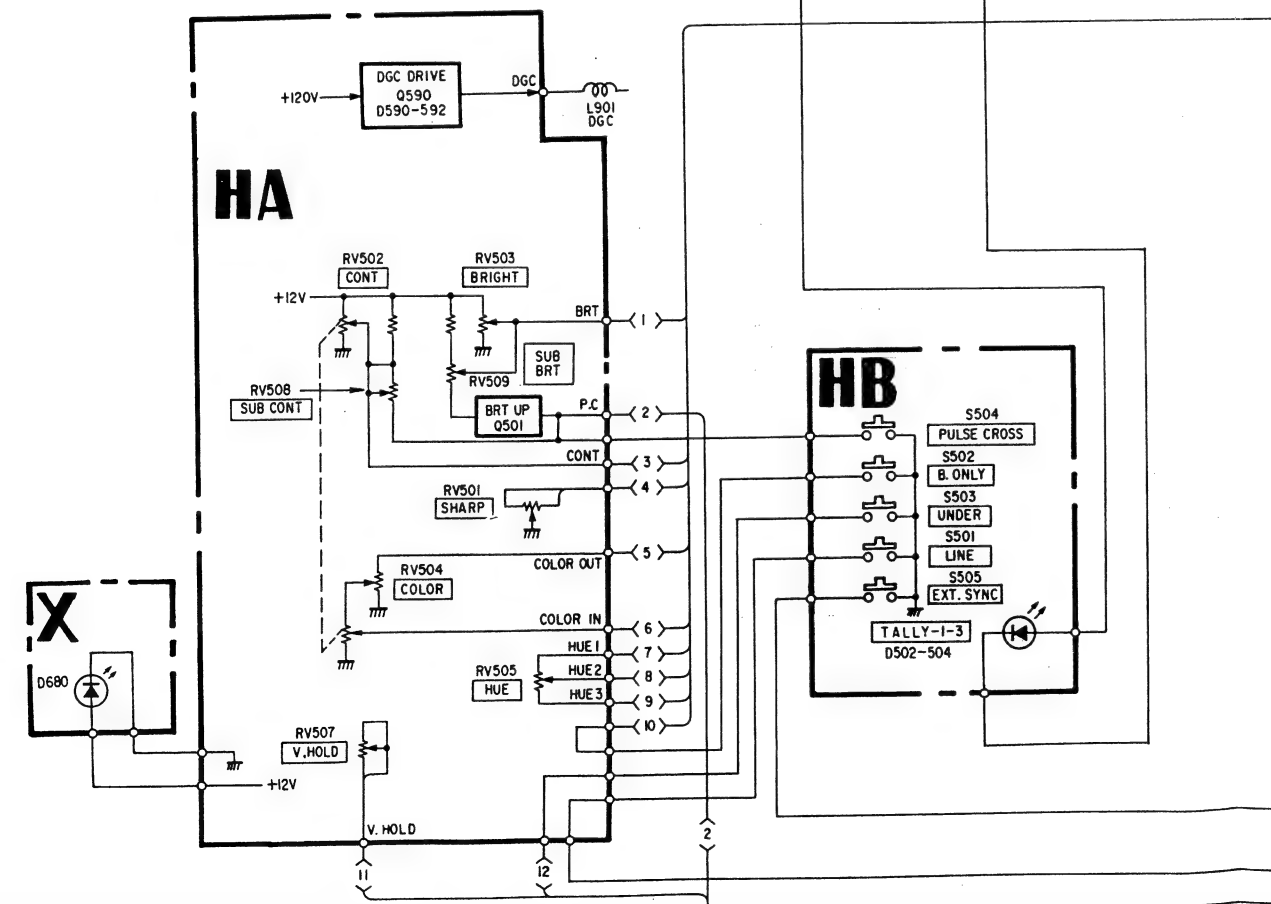
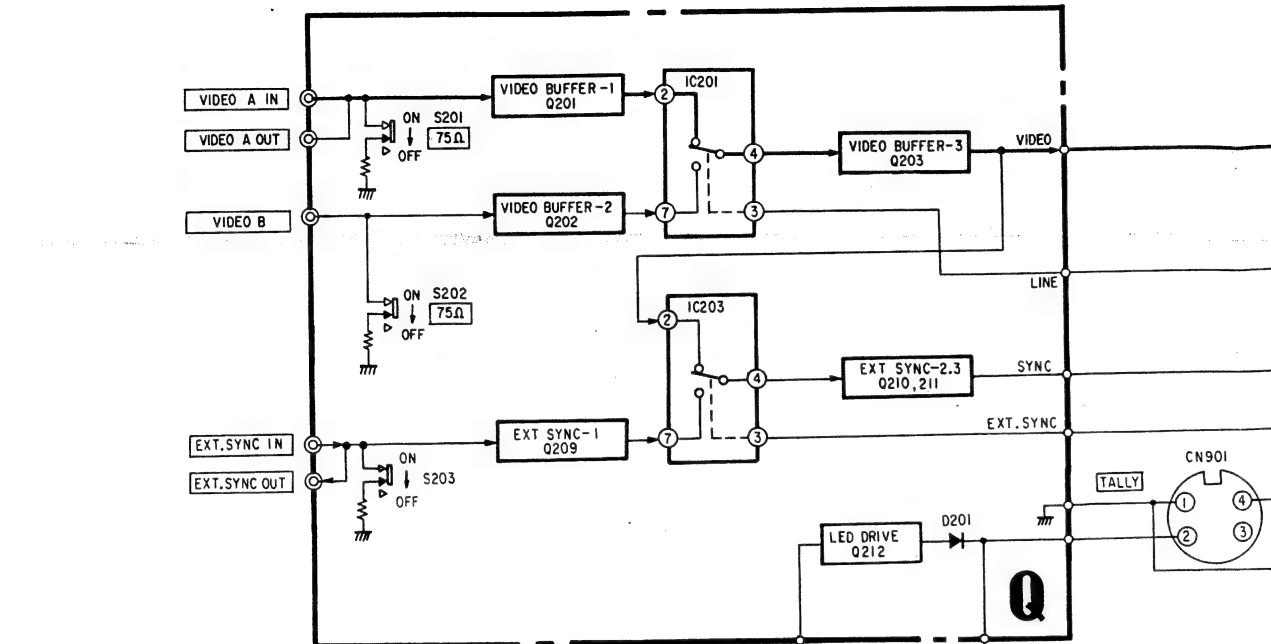


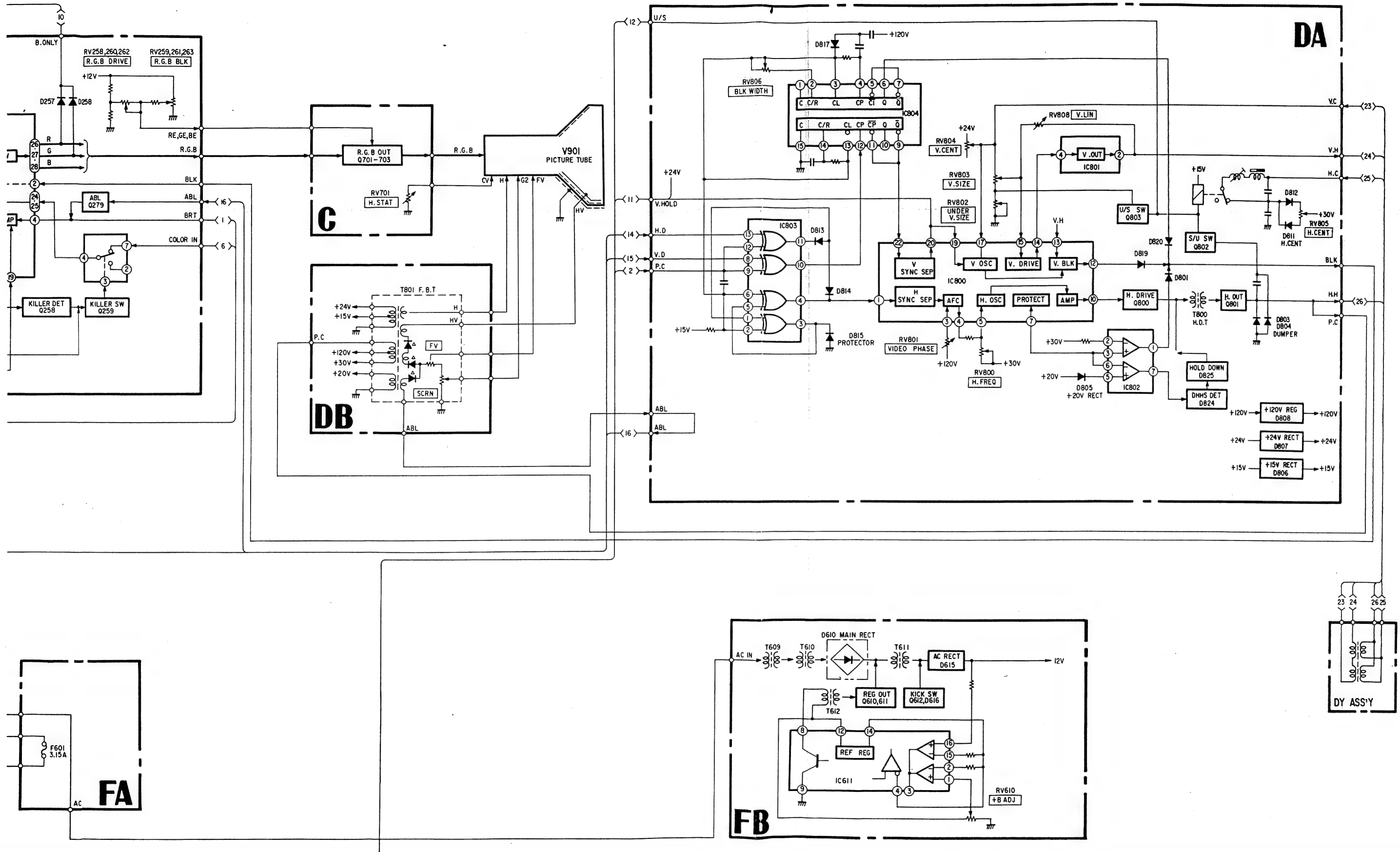
SECTION 5 DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



5-2. BLOCK DIAGRAM





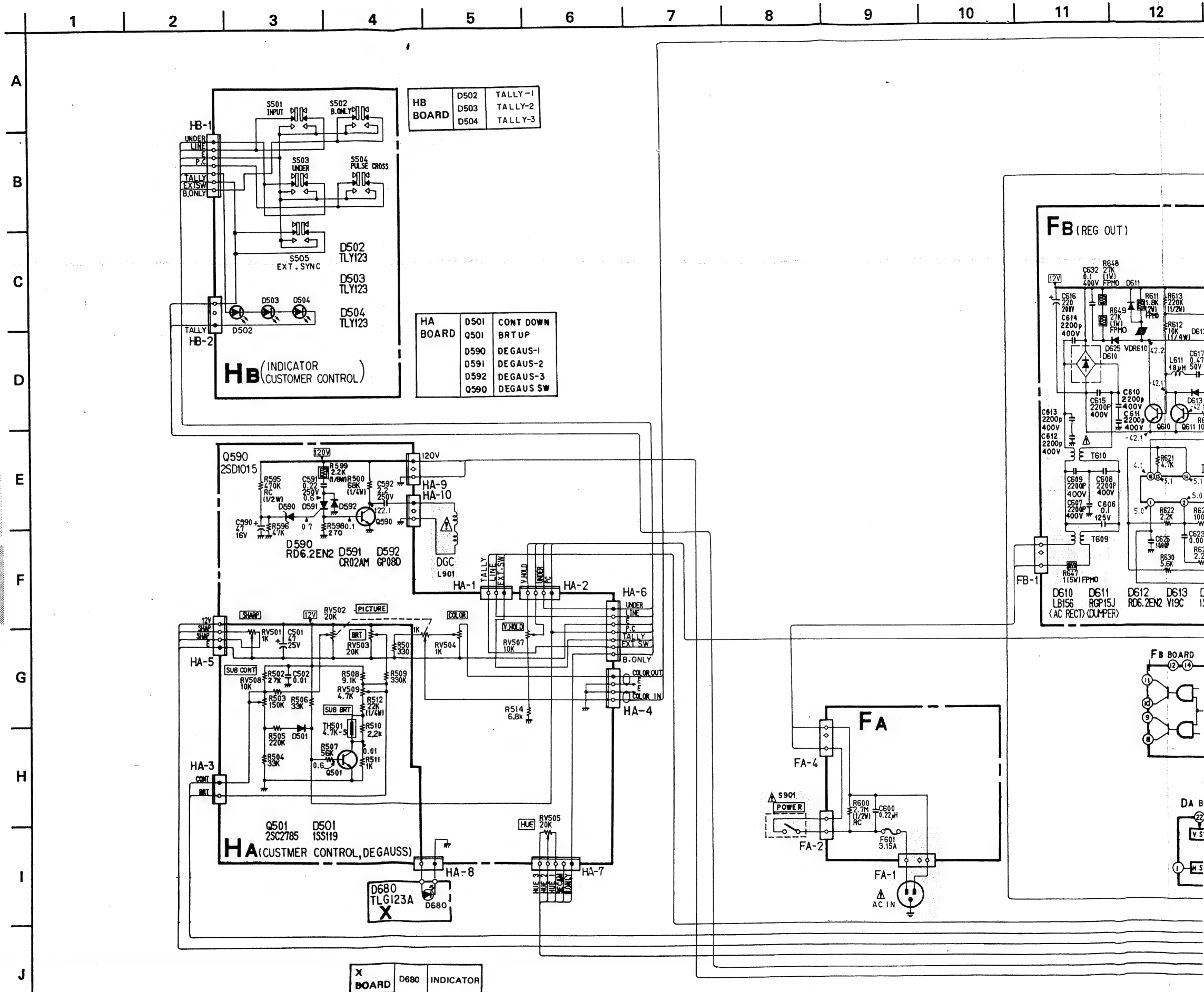
5-3. SCHEMATIC DIAGRAM

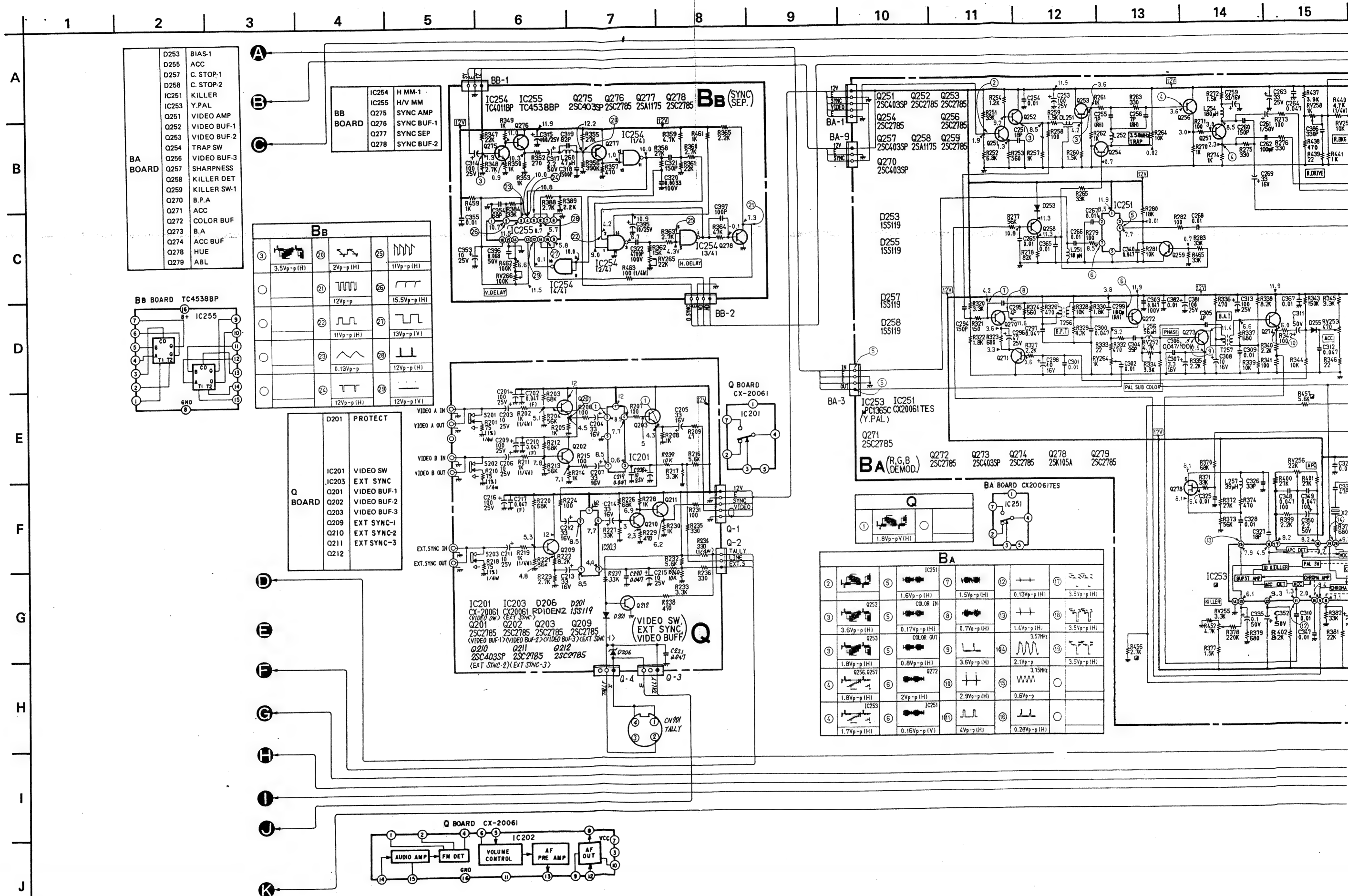
Note:

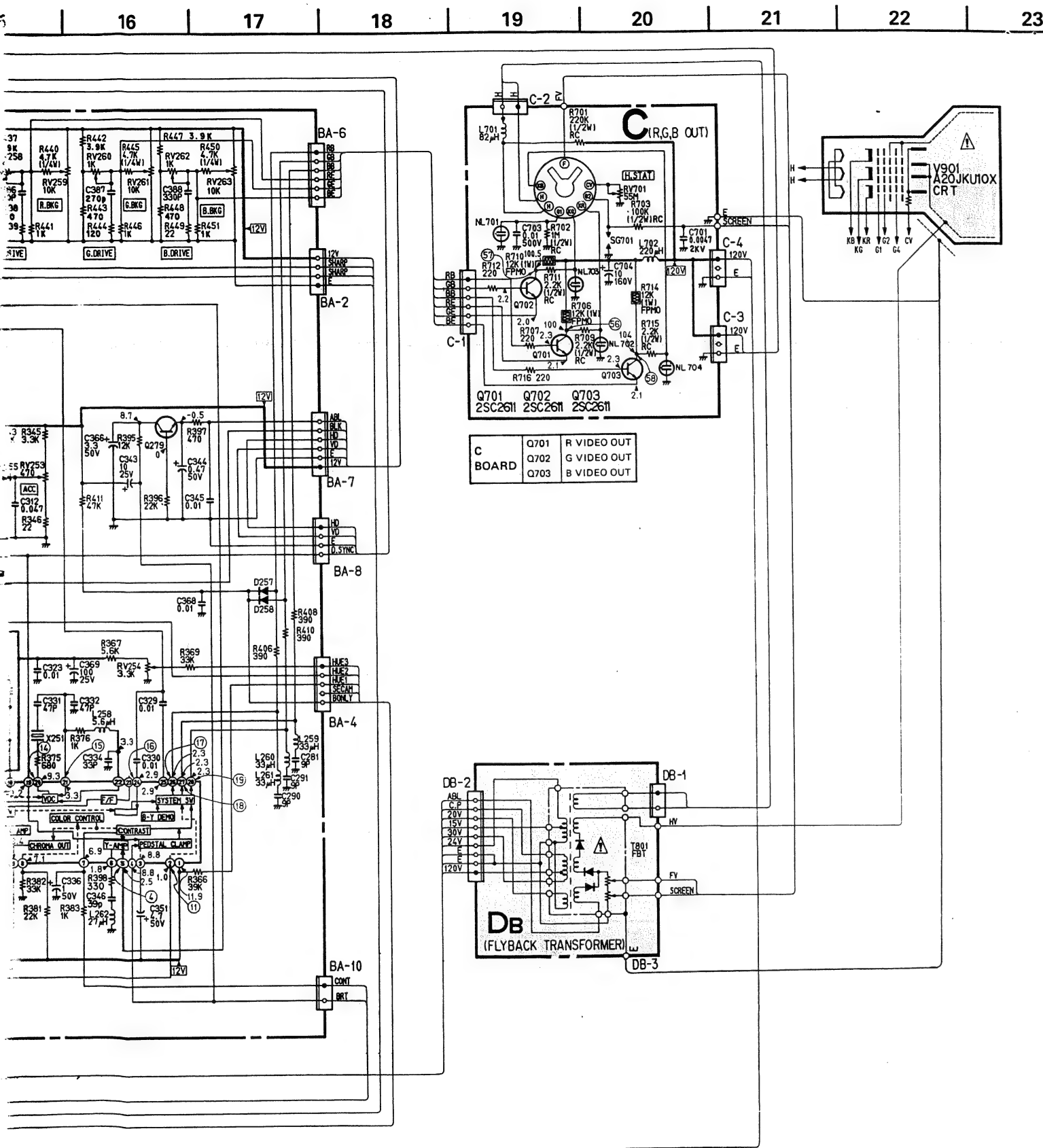
- All capacitors are in μF unless otherwise noted. pF: μF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{6}W$ unless otherwise noted. k: 1000 Ω , M: 1000 k Ω
- Δ : internal component.
- \square : nonflammable resistor.
- \square : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by \blacksquare in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by \blacksquare , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by \blacksquare and repeat the adjustment until the specified value is achieved. (Refer to R626 R859 adjustment on page 20, 21.)
- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
- \square : adjustment for repair.
- --- : B+ bus.
- --- : B- bus.

Note: The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.







5-4. SEMICONDUCTORS

A	AN5250 (Marking side view)	μ PC1365C (Top view)	2SA933S 2SC1740S E C B	2SD774 E C B	CR02AM-4 CR02AM-8 gate anode cathode	RDG15J anode cathode
B						
C	CX-20061 1 2 3 4 5 6 7 8	μ PC1377C (Top view)	2SC2334 2SD1134 B C E	2SD1015 2SD789 E C B	ERC24-06S GP08B RH-1 RH-1A cathode anode	TLG123A TLY123 long short anode cathode
D	HD14011BP HD14538BP TC4011BP TC4030BP μ PD4030BC (Top view)	μ PC1378H-L 1 2 3 4 5 6 7	2SC2456 2SC2611 letter side E C B	2SK105A S G D	ERC88-009 cathode anode probe	U05G cathode anode
E						
F	HD14538BP TC4538BP (Top view)	μ PC78M12H 1 2 3 4 5 6 7	2SC2555 B C E	1SS83 1S1555 1S2076 ERC81-004 HZ11A HZ18 HZ6C2 RD10E-N2 RD12EB2 RD20E-N1 RD20E-N2 RD20E-N3 RD20E-N4 RD6.2E-N2 RD8.2E-N2	ESAB82-004 ESAC82-004 anode cathode	V19C V19CSS V19E anode cathode
G						
H	MB3759-SNY (Top view)	2SA1048 2SA1115 2SC2458 2SC2603 2SC403SP 1 2 3 4 5 6 7 8	2SC3075 B C E	LB156 cathode anode		
I	NJM2903D NJM4558C μ PC4558C (Top view)	2SA1175 2SC2785 letter side E C B	2SD1403 B C E	1SS119 1SS133 1SS148 cathode anode	N13T1 cathode anode gate	

5-5. PRINTED WIRING BOARDS

BA

[R.G.B DEMOD]

BB

[SYNC SEP]

Q

[VIDEO SW, EXT SYNC,
VIDEO BUFF]

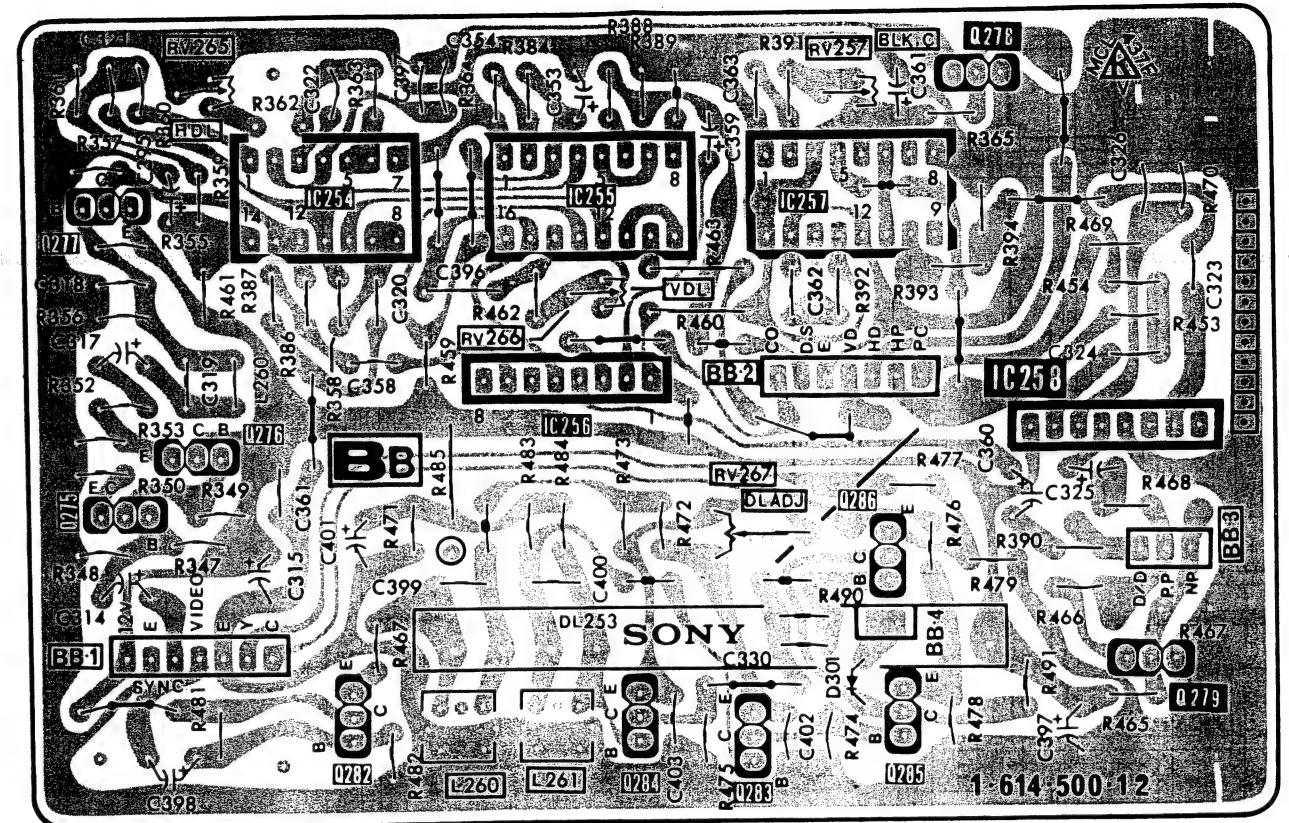
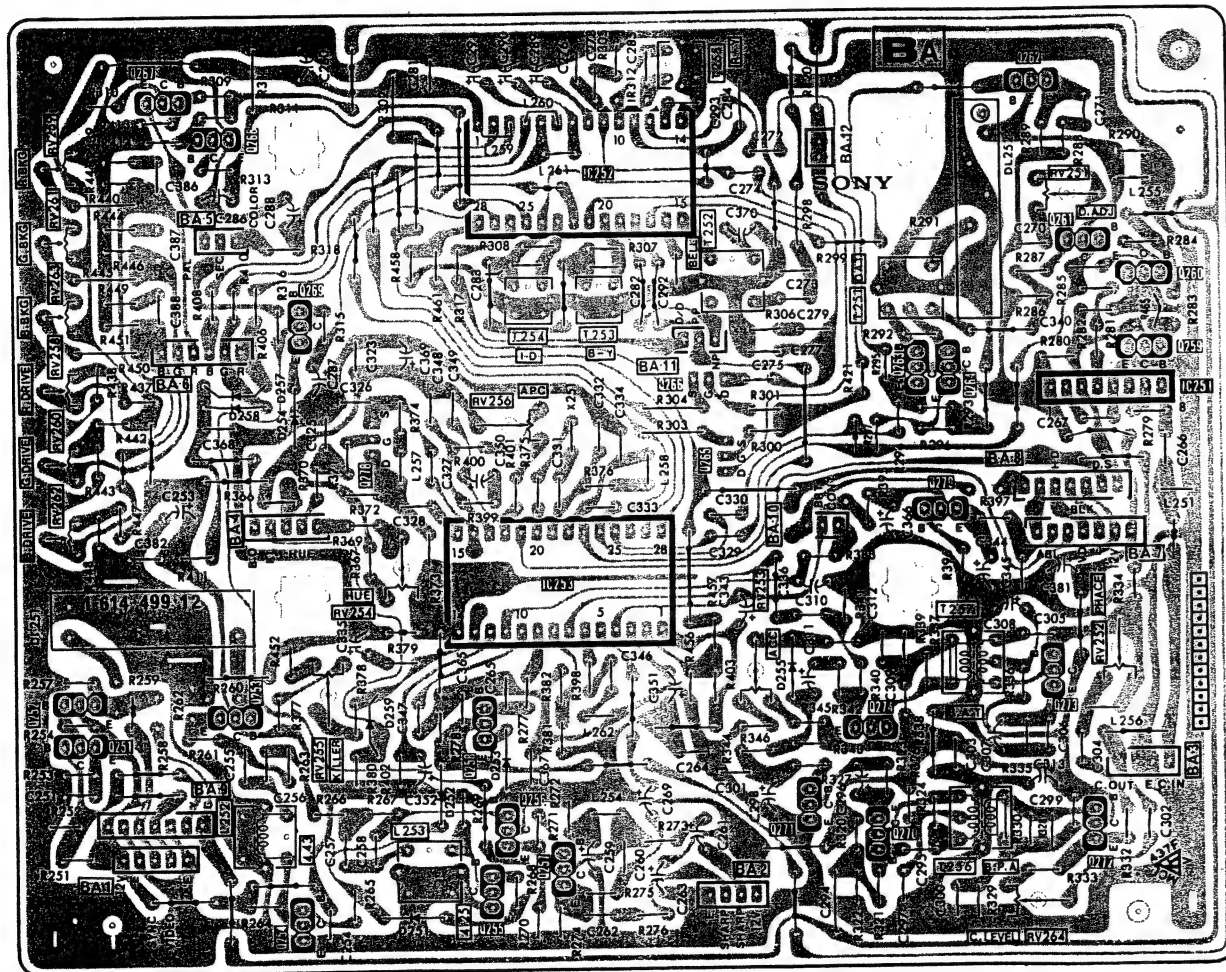
C

[R.G.B DEMOD]

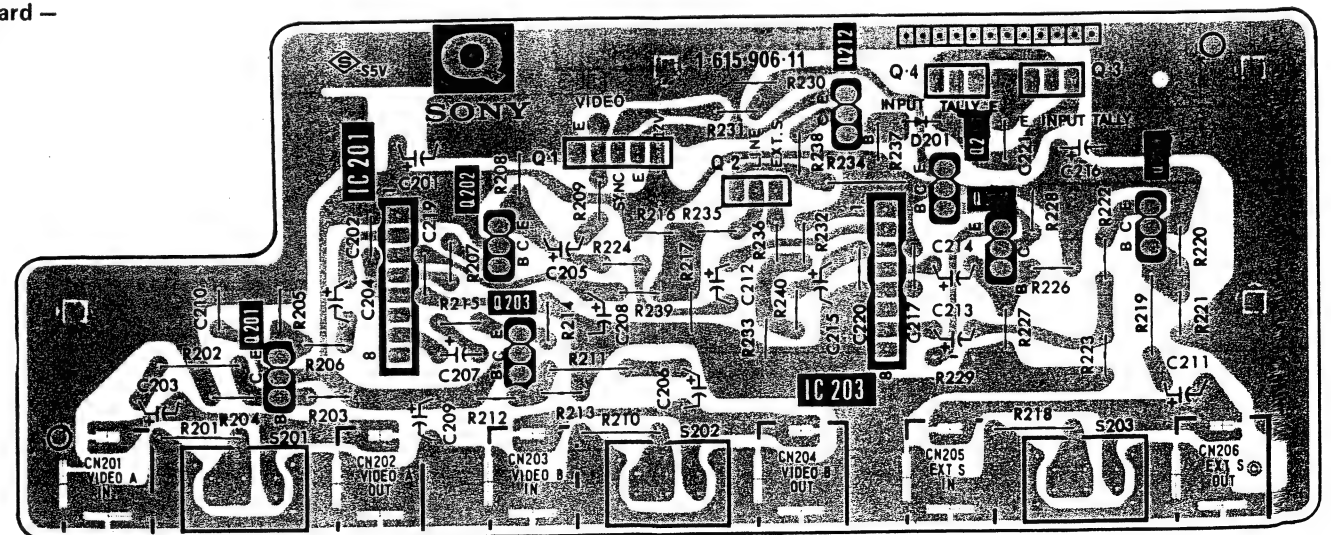
- BA Board -

- BB Board -

Q	267	268	269	278	258	IC252	262	261	260	Q
IC	252	253	254	255	257	IC253	273	272	IC251	IC
D	257	258	254	259	251	252	253	255	RV251	D
ADJ	RV258	RV253	RV255	RV254	RV256	RV264	RV252	ADJ		



- Q Board -



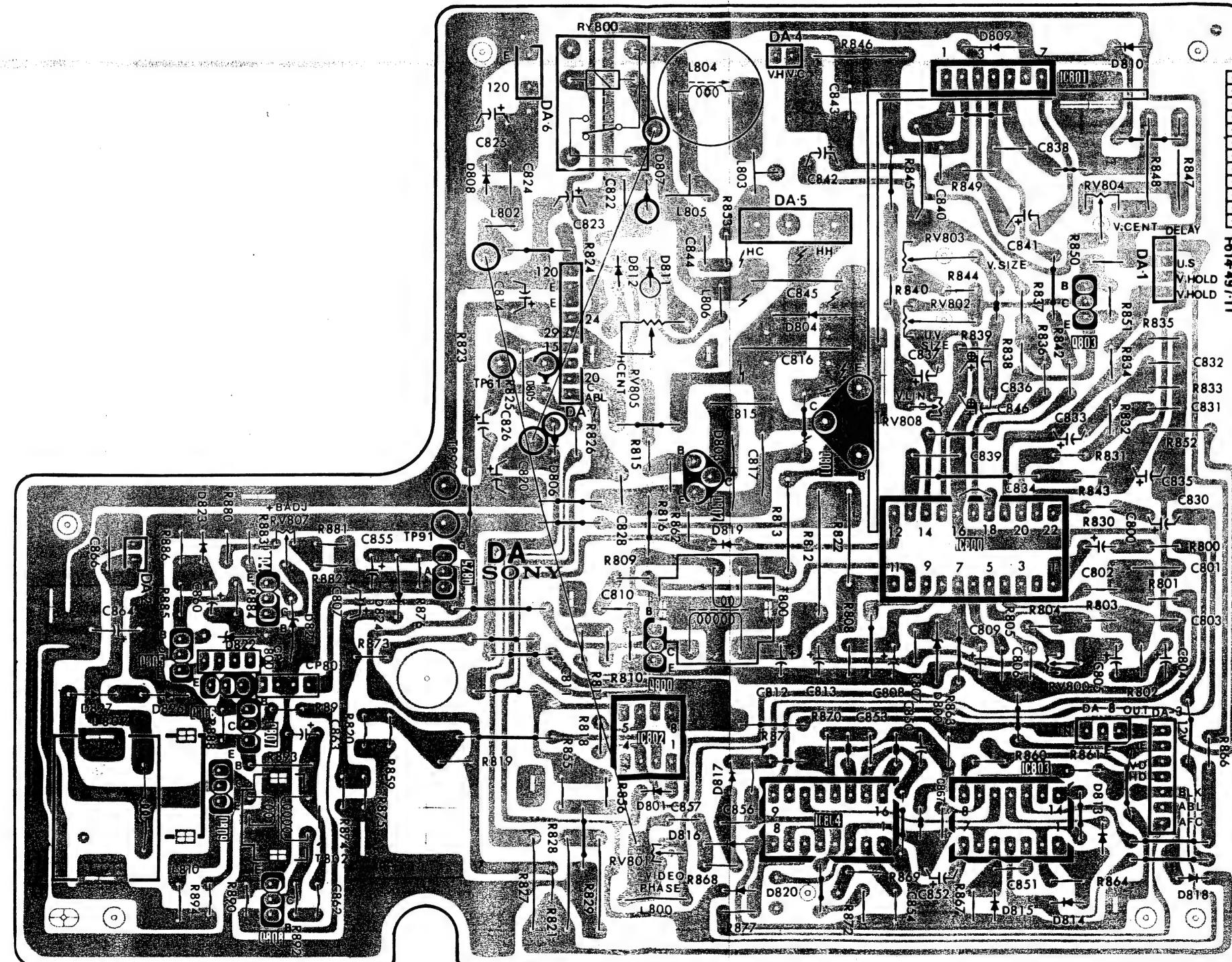
30

Diagram of a Sony C870 camera showing controls like DD-1, OUT, and IN REG, with the text "Do SONY" and "1-615-160-11".

DA [H.V. OUT]

— DA Board —

Q	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Q
IC	805	806	807	804		825	800	802	801	IC801	803					IC
	809	808					IC802		IC804	IC800	IC803					
D	827	826	823	822	821	824	808	805	806	812	807	811	819	803	817	D
										801	816	820				
ADJ					RV807			RV805			RV803	RV802	RV808	RV800	RV804	ADJ
								RV801								



FB

[REG]

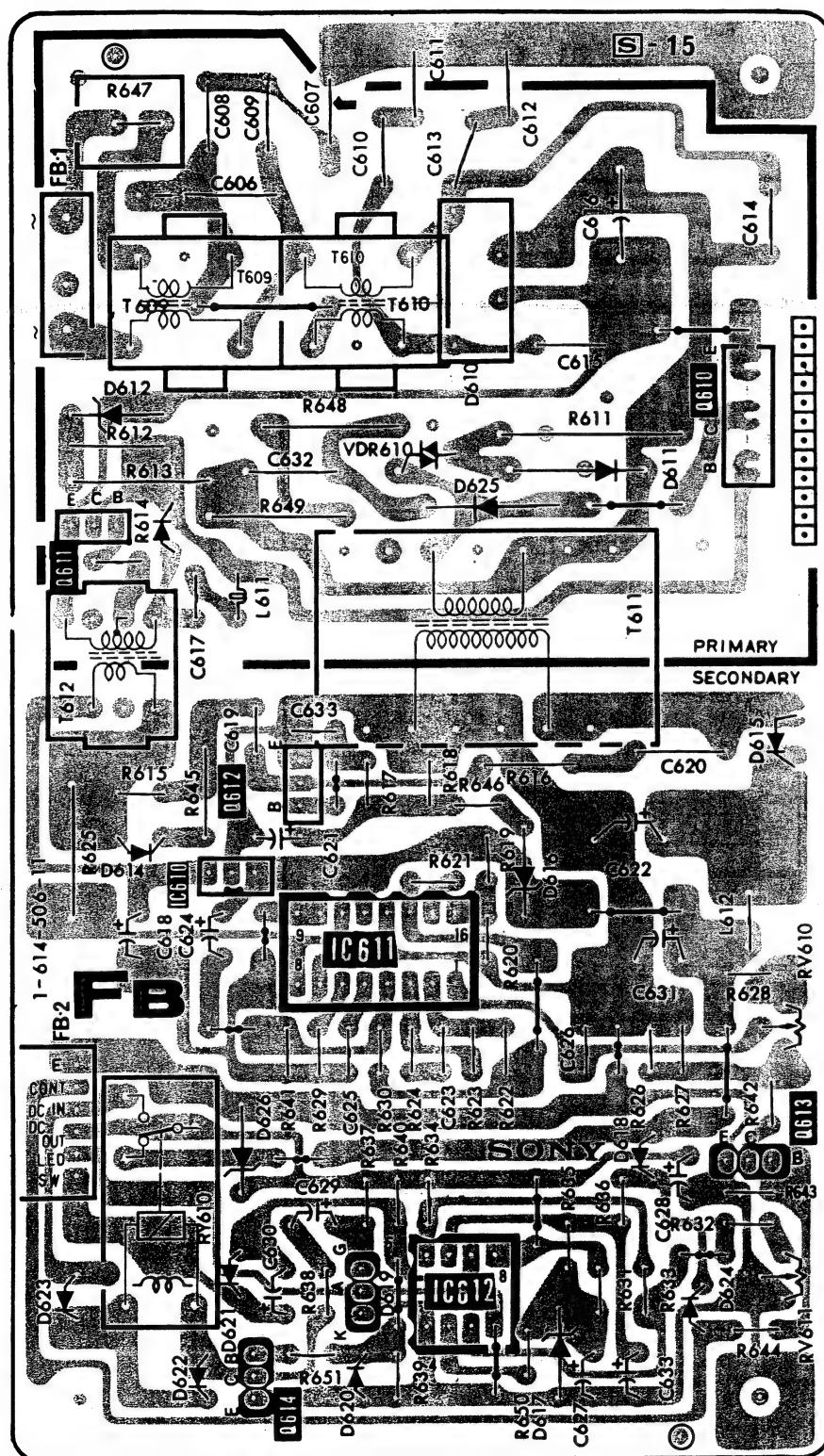
FA

DB

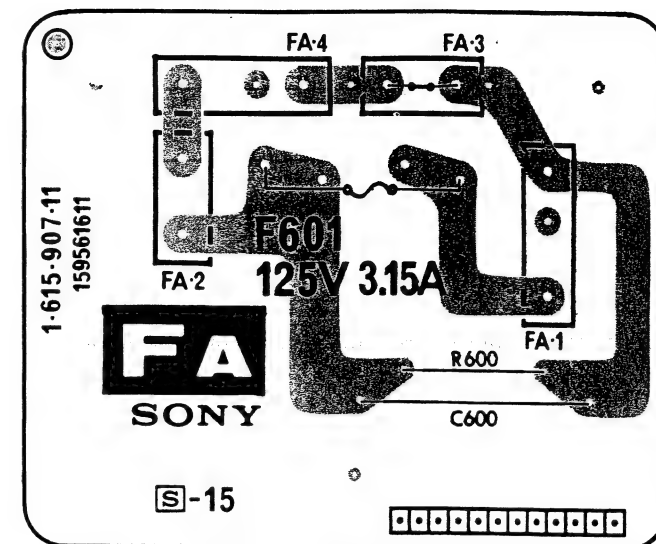
[FLYBACK TRANSFORMER]

— FB Board —

— FA Board —



— DB Board —




SECTION 6


EXPLODED VIEWS

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

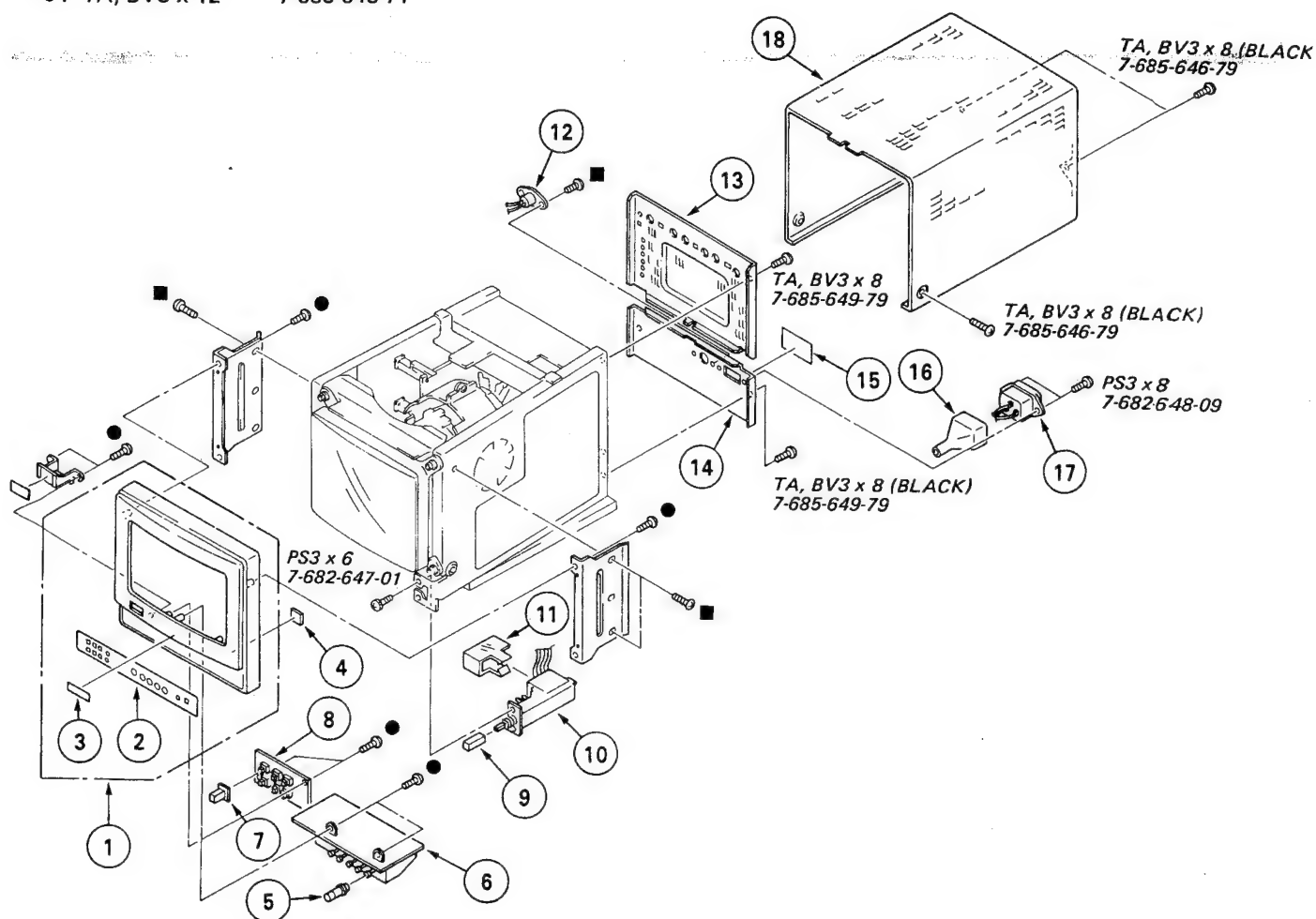
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. BEZEL

- : TA, BV3 x 8 7-685-646-71
 ●: TA, BV3 x 12 7-685-648-71

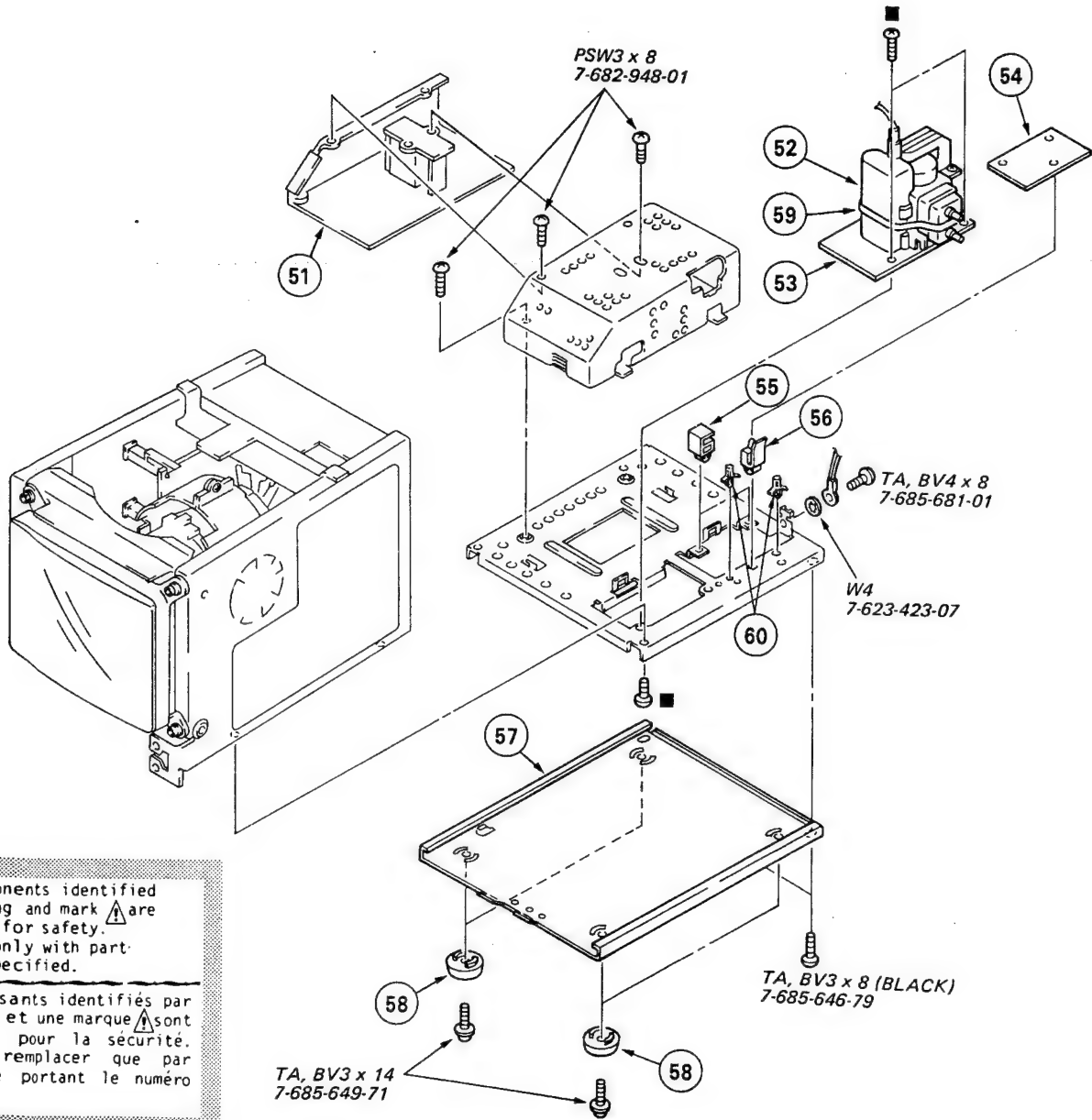



No.	Part No.	Description
1	X-4374-810-1	BEZEL ASSY
2	4-374-863-01	LABEL, CONTROL
3	3-566-707-00	EMBLEM, SONY
4	*1-614-496-11	X BOARD
5	4-374-820-01	KNOB, CONTROL
6	*1-615-909-11	HA BOARD
7	4-369-627-11	PUSH BUTTON
8	*1-615-910-11	HB BOARD
9	4-374-839-01	BUTTON (A)
10	▲.1-570-200-11	SWITCH, PUSH (AC POWER) 1 KEY


Remark	No.	Part No.	Description	Remark
2,3	11	*4-374-825-01	COVER, SWITCH	
	12	1-509-718-00	DIN 4P SOCKET	
	13	*4-374-861-01	PANEL, CONNECTOR	
	14	*4-374-862-01	PANEL, POWER	
	15	*4-374-867-01	LABEL (LARGE), MODEL NUMBER	
	16	*4-601-466-11	COVER, 3P INLET	
	17	▲.1-509-546-11	3P INLET	
	18	*4-374-864-01	CABINET (UPPER)	


6-2. CABINET

■: TA, BV3 x 8 7-685-646-71



The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description
51	*A-1245-288-A	FB BOARD, COMPLETE
52	 1-439-358-11	TRANSFORMER ASSY, FLYBACK
53	*1-615-908-11	DB BOARD
54	*1-615-907-11	FA BOARD
55	*3-701-903-00	HOLDER, PC BOARD

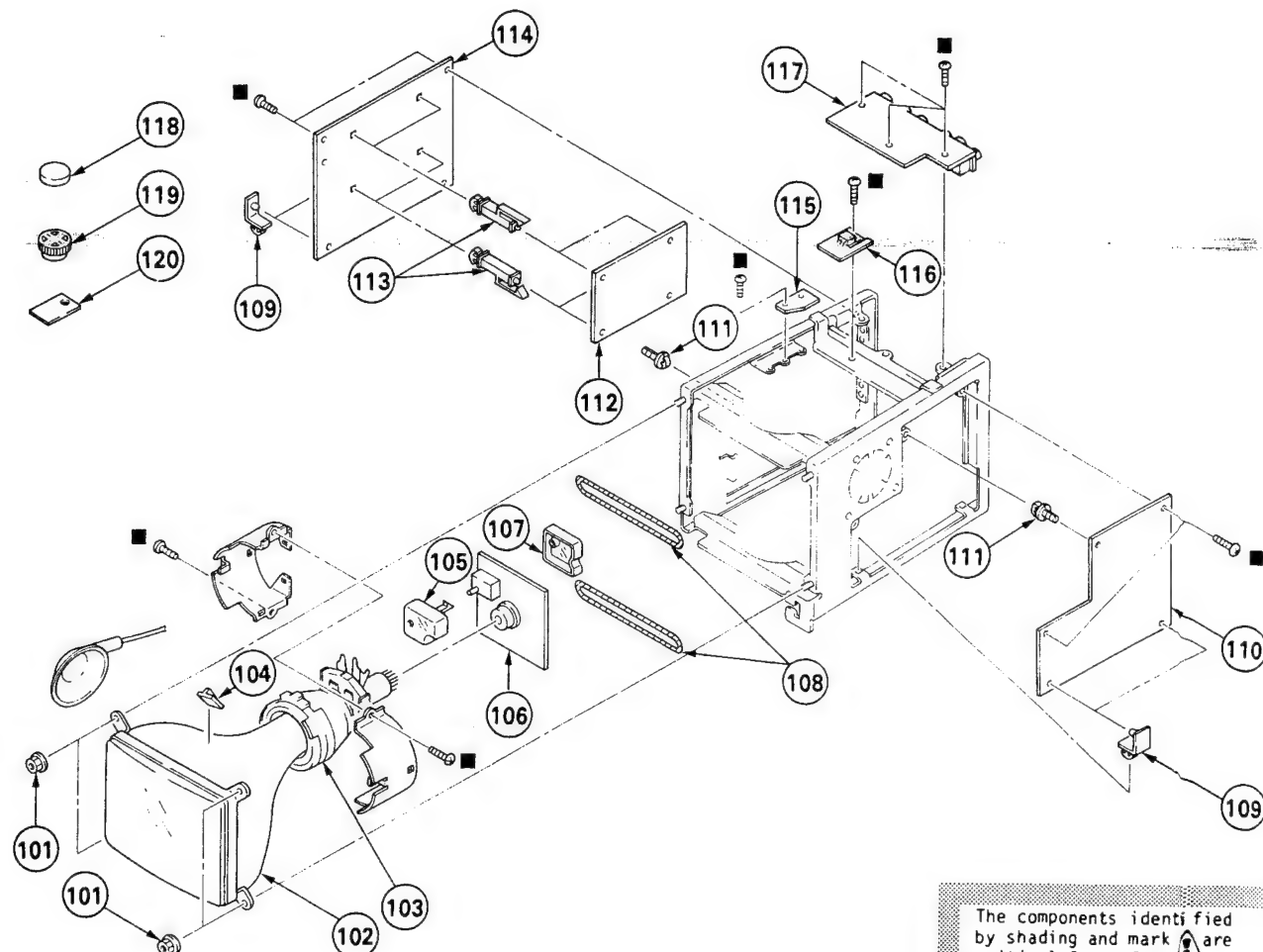
Remark	No.	Part No.	Description
	56	*3-659-681-00	HOLDER, PC BOARD
	57	*4-374-865-01	CABINET (LOWER)
	58	4-374-857-01	FOOT
	59	4-374-856-01	TAPE, COPPER FOIL
	60	*3-670-570-00	SPACER, SUPPORT


Remark


6-3. CHASSIS




■: TA, BV3 x 8

7-685-646-71




The components identified by shading and mark  are critical for safety. Replace only with part number specified.


Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
101	4-304-511-00	NUT, FLANGE		111	*4-303-473-00	SUPPORT, PC	
102	 8-737-151-05	CRT (A20JKU10X)		112	*A-1135-288-A	BB BOARD, COMPLETE	
103	 1-451-265-11	DEFLECTION YOKE (SY-167)		113	*3-657-516-00	SUPPORT, PC BOARD	
104	4-309-369-00	SPACER, DEFLECTION YOKE		114	*A-1135-322-A	BA BOARD, COMPLETE	
105	*4-374-822-01	COVER (A), CONTROL		115	*4-374-868-01	INSULATOR (DO)	
106	*A-1330-584-A	C BOARD, COMPLETE		116	*1-615-160-11	DO BOARD	
107	*4-374-806-01	COVER (B), CONTROL		117	*A-1270-161-A	Q BOARD, COMPLETE	
108	 1-426-043-12	COIL, DEGAUSSING		118	1-452-032-00	MAGNET DISK; 10MM ϕ	
109	*3-701-832-00	HINGE, CIRCUIT BOARD		119	1-452-094-00	MAGNET ROTATABLE DISK; 15MM ϕ	
110	*A-1345-552-A	DA BOARD, COMPLETE		120	1-452-126-11	MAGNET	

BA

NOTE:

The components identified by shading and mark  are critical for safety. - Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

When indicating parts by reference number, please include the board name.

CAPACITORS

- MF : μF , PF : $\mu\mu F$

RESISTORS

- All resistors are in ohms
- F : nonflammable

COLLS

- * MMH : mH, UH : μ H

[illegible]

BA

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C298	1-123-356-00	ELECT	10MF 20%	16V	D257	8-719-911-19	DIODE 1SS119
C299	1-102-848-00	CERAMIC	180PF 5%	50V	D258	8-719-911-19	DIODE 1SS119
C300	1-101-006-21	CERAMIC	0.047MF	50V	<u>DELAY LINE</u>		
C301	1-101-004-00	CERAMIC	0.01MF	50V	QL251	1-415-330-00	DELAY LINE, Y
C302	1-101-004-00	CERAMIC	0.01MF	50V	<u>IC</u>		
C303	1-106-212-00	MYLAR	0.047MF 10%	100V	IC251	8-752-006-10	IC CX20061
C304	1-102-965-00	CERAMIC	39PF 5%	50V	IC253	8-759-113-65	IC UPC1365C
C305	1-102-937-00	CERAMIC	4PF 0.5PF	50V	<u>COIL</u>		
C306	1-106-212-00	MYLAR	0.047MF 10%	100V	L251	1-408-412-00	MICRO INDUCTOR 18UH
C307	1-131-368-00	TANTALUM	3.3MF 10%	16V	L252	1-409-193-00	COIL 3.58MHZ TRAP
C308	1-123-356-00	ELECT	10MF 20%	16V	L254	1-408-424-00	MICRO INDUCTOR 180UH
C309	1-102-129-00	CERAMIC	0.01MF 10%	50V	L256	1-408-418-00	MICRO INDUCTOR 56UH
C310	1-102-129-00	CERAMIC	0.01MF 10%	50V	L257	1-408-416-00	MICRO INDUCTOR 39UH
C311	1-123-380-00	ELECT	1MF 20%	50V	L258	1-408-406-00	MICRO INDUCTOR 5.6UH
C312	1-101-006-21	CERAMIC	0.047MF	50V	L259	1-408-415-00	MICRO INDUCTOR 33UH
C313	1-123-333-00	ELECT	100MF 20%	25V	L260	1-408-415-00	MICRO INDUCTOR 33UH
C323	1-102-129-00	CERAMIC	0.01MF 10%	50V	L261	1-408-415-00	MICRO INDUCTOR 33UH
C325	1-102-129-00	CERAMIC	0.01MF 10%	50V	L262	1-408-414-00	MICRO INDUCTOR 27UH
C326	1-101-880-00	CERAMIC	47PF 5%	50V	<u>TRANSISTOR</u>		
C327	1-102-944-00	CERAMIC	7PF 0.5PF	50V	Q251	8-729-603-30	TRANSISTOR 2SC403SP-3
C328	1-102-129-00	CERAMIC	0.01MF 10%	50V	Q252	8-729-245-83	TRANSISTOR 2SC2458
C329	1-102-129-00	CERAMIC	0.01MF 10%	50V	Q253	8-729-245-83	TRANSISTOR 2SC2458
C330	1-102-129-00	CERAMIC	0.01MF 10%	50V	Q254	8-729-245-83	TRANSISTOR 2SC2458
C331	1-101-880-00	CERAMIC	47PF 5%	50V	Q256	8-729-245-83	TRANSISTOR 2SC2458
C332	1-101-880-00	CERAMIC	47PF 5%	50V	Q257	8-729-603-30	TRANSISTOR 2SC403SP-3
C334	1-102-963-00	CERAMIC	33PF 5%	50V	Q258	8-729-204-83	TRANSISTOR 2SA1048GR
C335	1-131-341-00	TANTALUM	0.1MF 20%	35V	Q259	8-729-245-83	TRANSISTOR 2SC2458
C336	1-123-380-00	ELECT	1MF 20%	50V	Q270	8-729-603-30	TRANSISTOR 2SC403SP-3
C340	1-101-006-21	CERAMIC	0.047MF	50V	Q271	8-729-178-55	TRANSISTOR 2SC2785-E
C343	1-123-329-51	ELECT	10MF 20%	25V	Q272	8-729-245-83	TRANSISTOR 2SC2458
C344	1-123-379-00	ELECT	0.47MF 20%	50V	Q273	8-729-603-30	TRANSISTOR 2SC403SP-3
C345	1-102-129-00	CERAMIC	0.01MF 10%	50V	Q274	8-729-245-83	TRANSISTOR 2SC2458
C346	1-102-965-00	CERAMIC	39PF 5%	50V	Q278	8-729-115-30	TRANSISTOR 2SK105A-30
C347	1-102-129-00	CERAMIC	0.01MF 10%	50V	Q279	8-729-245-83	TRANSISTOR 2SC2458
C348	1-106-212-00	MYLAR	0.047MF 10%	100V	<u>RESISTOR</u>		
C349	1-106-212-00	MYLAR	0.047MF 10%	100V	R251	1-247-867-00	CARBON 33K 5% 1/6W
C350	1-123-381-00	ELECT	2.2MF 20%	50V	R252	1-247-851-00	CARBON 6.8K 5% 1/6W
C351	1-123-369-00	ELECT	4.7MF 20%	50V	R253	1-247-825-00	CARBON 560 5% 1/6W
C352	1-123-380-00	ELECT	1MF 20%	50V	R254	1-247-833-00	CARBON 1.2K 5% 1/6W
C365	1-102-129-00	CERAMIC	0.01MF 10%	50V	R257	1-247-831-00	CARBON 1K 5% 1/6W
C366	1-123-382-00	ELECT	3.3MF 20%	50V	R258	1-247-807-00	CARBON 100 5% 1/6W
C367	1-102-129-00	CERAMIC	0.01MF 10%	50V	R259	1-249-419-11	CARBON 1.5K 5% 1/6W
C368	1-102-129-00	CERAMIC	0.01MF 10%	50V	R260	1-249-419-11	CARBON 1.5K 5% 1/6W
C369	1-123-333-00	ELECT	100MF 20%	25V	R261	1-247-831-00	CARBON 1K 5% 1/6W
C381	1-123-333-00	ELECT	100MF 20%	25V	R262	1-247-831-00	CARBON 1K 5% 1/6W
C382	1-101-004-00	CERAMIC	0.01MF	50V	R263	1-247-819-00	CARBON 330 5% 1/6W
C386	1-102-820-00	CERAMIC	330PF 5%	50V	R264	1-249-429-11	CARBON 10K 5% 1/6W
C387	1-102-980-00	CERAMIC	270PF 5%	50V	R265	1-247-867-00	CARBON 33K 5% 1/6W
C388	1-102-820-00	CERAMIC	330PF 5%	50V			
<u>DIODE</u>							
D253	8-719-911-19	DIODE 1SS119					
D255	8-719-911-19	DIODE 1SS119					

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Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R270	1-247-831-00	CARBON	1K 5% 1/6W	R382	1-247-867-00	CARBON	33K 5% 1/6W
R271	1-247-807-00	CARBON	100 5% 1/6W	R383	1-247-831-00	CARBON	1K 5% 1/6W
R272	1-249-419-11	CARBON	1.5K 5% 1/6W	R395	1-247-857-00	CARBON	12K 5% 1/6W
R273	1-247-807-00	CARBON	100 5% 1/6W	R396	1-247-863-00	CARBON	22K 5% 1/6W
R274	1-247-831-00	CARBON	1K 5% 1/6W	R397	1-247-823-00	CARBON	470 5% 1/6W
R275	1-247-819-00	CARBON	330 5% 1/6W	R398	1-247-819-00	CARBON	330 5% 1/6W
R276	1-247-819-00	CARBON	330 5% 1/6W	R399	1-249-421-11	CARBON	2.2K 5% 1/6W
R277	1-247-873-00	CARBON	56K 5% 1/6W	R400	1-249-434-11	CARBON	27K 5% 1/6W
R278	1-247-877-00	CARBON	82K 5% 1/6W	R401	1-249-434-11	CARBON	27K 5% 1/6W
R279	1-247-807-00	CARBON	100 5% 1/6W	R402	1-247-877-00	CARBON	82K 5% 1/6W
R280	1-247-861-00	CARBON	18K 5% 1/6W	R404	1-247-883-00	CARBON	150K 5% 1/6W
R281	1-249-429-11	CARBON	10K 5% 1/6W	R406	1-247-821-00	CARBON	390 5% 1/6W
R282	1-247-807-00	CARBON	100 5% 1/6W	R408	1-247-821-00	CARBON	390 5% 1/6W
R283	1-247-867-00	CARBON	33K 5% 1/6W	R410	1-247-821-00	CARBON	390 5% 1/6W
R320	1-247-843-00	CARBON	3.3K 5% 1/6W	R411	1-249-437-11	CARBON	47K 5% 1/6W
R321	1-247-811-00	CARBON	150 5% 1/6W	R437	1-247-845-00	CARBON	3.9K 5% 1/6W
R322	1-247-837-00	CARBON	1.8K 5% 1/6W	R438	1-247-823-00	CARBON	470 5% 1/6W
R323	1-247-827-00	CARBON	680 5% 1/6W	R439	1-247-791-00	CARBON	22 5% 1/6W
R324	1-247-825-00	CARBON	560 5% 1/6W	R440	1-247-721-11	CARBON	4.7K 5% 1/4W
R326	1-247-823-00	CARBON	470 5% 1/6W	R441	1-247-831-00	CARBON	1K 5% 1/6W
R327	1-249-421-11	CARBON	2.2K 5% 1/6W	R442	1-247-845-00	CARBON	3.9K 5% 1/6W
R328	1-249-429-11	CARBON	10K 5% 1/6W	R443	1-247-823-00	CARBON	470 5% 1/6W
R329	1-247-847-00	CARBON	4.7K 5% 1/6W	R444	1-247-809-00	CARBON	120 5% 1/6W
R330	1-247-837-00	CARBON	1.8K 5% 1/6W	R445	1-247-721-11	CARBON	4.7K 5% 1/4W
R332	1-247-823-00	CARBON	470 5% 1/6W	R446	1-247-831-00	CARBON	1K 5% 1/6W
R333	1-247-791-00	CARBON	22 5% 1/6W	R447	1-247-845-00	CARBON	3.9K 5% 1/6W
R334	1-247-843-00	CARBON	3.3K 5% 1/6W	R448	1-247-823-00	CARBON	470 5% 1/6W
R335	1-249-421-11	CARBON	2.2K 5% 1/6W	R449	1-247-791-00	CARBON	22 5% 1/6W
R336	1-247-823-00	CARBON	470 5% 1/6W	R450	1-247-721-11	CARBON	4.7K 5% 1/4W
R337	1-247-827-00	CARBON	680 5% 1/6W	R451	1-247-831-00	CARBON	1K 5% 1/6W
R338	1-247-853-00	CARBON	8.2K 5% 1/6W	R452	1-247-847-00	CARBON	4.7K 5% 1/6W
R339	1-249-429-11	CARBON	10K 5% 1/6W	R456	1-247-841-00	CARBON	2.7K 5% 1/6W
R340	1-247-831-00	CARBON	1K 5% 1/6W	R457	1-247-849-00	CARBON	5.6K 5% 1/6W
R341	1-247-807-00	CARBON	100 5% 1/6W	R465	1-247-867-00	CARBON	33K 5% 1/6W
R342	1-247-807-00	CARBON	100 5% 1/6W				
R343	1-247-883-00	CARBON	150K 5% 1/6W	VARIABLE RESISTOR			
R344	1-249-429-11	CARBON	10K 5% 1/6W	RV252	1-228-723-00	RES, ADJ, CERAMIC CARBON	4.7K
R345	1-247-843-00	CARBON	3.3K 5% 1/6W	RV253	1-228-719-00	RES, ADJ, CERAMIC CARBON	470
R346	1-247-791-00	CARBON	22 5% 1/6W	RV254	1-228-722-00	RES, ADJ, CERAMIC CARBON	3.3K
R366	1-247-869-00	CARBON	39K 5% 1/6W	RV255	1-228-722-00	RES, ADJ, CERAMIC CARBON	3.3K
R367	1-247-849-00	CARBON	5.6K 5% 1/6W	RV256	1-228-725-00	RES, ADJ, CERAMIC CARBON	22K
R369	1-247-867-00	CARBON	33K 5% 1/6W	RV258	1-224-660-00	RES, ADJ, METAL FILM	1K
R370	1-247-875-00	CARBON	68K 5% 1/6W	RV259	1-224-493-00	RES, ADJ, METAL FILM	10K
R371	1-247-867-00	CARBON	33K 5% 1/6W	RV260	1-224-660-00	RES, ADJ, METAL FILM	1K
R372	1-249-434-11	CARBON	27K 5% 1/6W	RV261	1-224-493-00	RES, ADJ, METAL FILM	10K
R373	1-247-873-00	CARBON	56K 5% 1/6W	RV262	1-224-660-00	RES, ADJ, METAL FILM	1K
R374	1-247-823-00	CARBON	470 5% 1/6W	RV263	1-224-493-00	RES, ADJ, METAL FILM	10K
R375	1-247-827-00	CARBON	680 5% 1/6W	RV264	1-228-720-00	RES, ADJ, CERAMIC CARBON	1K
R376	1-247-831-00	CARBON	1K 5% 1/6W				
R377	1-249-419-11	CARBON	1.5K 5% 1/6W	TRANSFORMER			
R378	1-247-887-00	CARBON	220K 5% 1/6W	T256	1-425-794-00	BPT-2	
R379	1-247-827-00	CARBON	680 5% 1/6W	T257	1-405-372-00	COIL BAT	
R381	1-247-863-00	CARBON	22K 5% 1/6W				


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FA

FB

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
<u>CRYSTAL</u>							
X251	1-527-396-00	CRYSTAL, OSC		C625	1-106-180-00	MYLAR 0.0022MF 10% 50V	
*****				C626	1-102-074-00	CERAMIC 0.001MF 10% 50V	
*1-615-907-11	FA BOARD	*****		C631	1-123-362-80	ELECT 330MF 20% 50V	
<u>CAPACITOR</u>				C632	1-130-806-00	FILM 0.1MF 10% 400V	
C600	1-108-745-00	MYLAR 0.22MF 20% 125V		C633	1-102-074-00	CERAMIC 0.001MF 10% 50V	
*4-316-137-00	COVER, CAPACITOR; C600			<u>DIODE</u>			
<u>FUSE</u>				D610	8-719-300-63	DIODE LB-156	
F601	1-532-557-11	FUSE, GLASS TUBE 3.15A		D611	8-719-924-06	DIODE ERC24-06S	
1-533-087-00	HOLDER, FUSE; F601			D612	8-719-102-74	DIODE RD6.2E-N2	
<u>CONNECTOR</u>				D613	8-719-901-93	DIODE V19E	
FA1	*1-508-765-00	3P PLUG (M)		D614	8-719-911-19	DIODE 1SS119	
FA2	*1-508-786-00	2P PLUG (M)		D615	8-719-908-20	DIODE ERC88-009	
FA4	*1-508-765-00	3P PLUG (M)		D616	8-719-102-90	DIODE RD10E-N2	
<u>RESISTOR</u>				D625	8-719-924-06	DIODE ERC24-06S	
R600	1-202-724-00	SOLID 2.7M 10% 1/2W		D626	8-719-101-24	DIODE RD39E-82	
*****				<u>CONNECTOR</u>			
*A-1245-288-A	FB BOARD, COMPLETE	*****		FB1	*1-508-765-00	3P PLUG (M)	
*2-430-232-00	INSULATOR (SR12E), TRANSISTOR			FB2	*1-564-450-11	PLUG, CONNECTOR (2.5MM) 2P	
*4-374-808-01	SPACER, INSULATING			<u>IC</u>			
*4-374-846-01	COVER, CAPACITOR, CAP TYPE			IC610	8-759-171-15	IC UPC7815H	
*4-374-846-11	COVER, CAPACITOR, CAP TYPE			IC611	8-759-906-62	IC MB3759-SNY	
<u>CAPACITOR</u>				<u>COIL</u>			
C606	1-136-345-51	FILM 0.1MF 20% 125V		L611	1-408-412-00	MICRO INDUCTOR 18UH	
C607	1-161-742-51	CERAMIC 0.0022MF 20% 400V		L612	1-407-365-00	COIL, CHOKE	
C608	1-161-742-51	CERAMIC 0.0022MF 20% 400V		<u>TRANSISTOR</u>			
C609	1-161-742-51	CERAMIC 0.0022MF 20% 400V		Q610	8-729-802-07	TRANSISTOR 2SD1403	
C610	1-161-742-51	CERAMIC 0.0022MF 20% 400V		Q611	8-729-177-43	TRANSISTOR 2SD774	
C611	1-161-742-51	CERAMIC 0.0022MF 20% 400V		Q612	8-729-177-43	TRANSISTOR 2SD774	
C612	1-161-742-51	CERAMIC 0.0022MF 20% 400V		<u>RESISTOR</u>			
C613	1-161-742-51	CERAMIC 0.0022MF 20% 400V		R611	1-206-670-00	METAL OXIDE 1.8K 5% 2W F	
C614	1-161-742-00	CERAMIC 0.0022MF 20% 400V		R612	1-247-725-11	CARBON 10K 5% 1/4W	
C615	1-161-742-51	CERAMIC 0.0022MF 20% 400V		R613	1-244-929-00	CARBON 220K 5% 1/2W	
C616	1-125-392-11	ELECT(BLOCK) 220MF 20% 200V		R614	1-247-807-00	CARBON 100 5% 1/6W	
C617	1-136-173-00	FILM 0.47MF 5% 50V		R615	1-247-827-00	CARBON 680 5% 1/6W	
C618	1-123-356-00	ELECT 10MF 20% 35V		R616	1-215-868-00	METAL OXIDE 680 5% 1W F	
C619	1-108-587-00	MYLAR 0.022MF 10% 50V		R617	1-247-847-00	CARBON 4.7K 5% 1/6W	
C620	1-161-328-00	CERAMIC 0.0047MF 30% 50V		R618	1-247-847-00	CARBON 4.7K 5% 1/6W	
C621	1-123-356-00	ELECT 10MF 20% 35V		R619	1-215-463-00	METAL 56K 1% 1/6W	
C622	1-124-602-00	ELECT 2200MF 20% 35V		R620	1-215-445-00	METAL 10K 1% 1/6W	
C623	1-108-833-00	MYLAR 0.0047MF 10% 50V		R621	1-247-847-00	CARBON 4.7K 5% 1/6W	
C624	1-123-356-00	ELECT 10MF 20% 35V		R622	1-249-421-11	CARBON 2.2K 5% 1/6W	
				R623	1-247-879-00	CARBON 100K 5% 1/6W	
				R624	1-249-421-11	CARBON 2.2K 5% 1/6W	
				R625	1-213-131-00	METAL OXIDE 100 5% 1W F	
				R626	1-215-449-00	METAL 15K 1% 1/6W	
				R627	1-215-449-00	METAL 15K 1% 1/6W	
				R628	1-215-465-00	METAL 68K 1% 1/6W	

- The components identified by  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Select the resistance value according to SAFETY RELATED ADJUSTMENT.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

FB

Q

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R629	1-215-447-00	METAL	12K 1% 1/6W			IC	
R630	1-247-849-00	CARBON	5.6K 5% 1/6W				
R641	1-249-421-11	CARBON	2.2K 5% 1/6W	IC201	8-750-006-10	IC CX20061	
R645	1-247-034-00	CARBON	220 5% 1/8W	IC203	8-750-006-10	IC CX20061	
R646	1-247-825-00	CARBON	560 5% 1/6W			CONNECTOR	
R647	1-205-616-11	CEMENTED	1 5% 5W	Q1	*1-564-441-11	PLUG, CONNECTOR (2.5MM) 5P	
R648	1-213-160-11	METAL OXIDE	27K 5% 1W	Q2	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P	
R649	1-213-160-11	METAL OXIDE	27K 5% 1W	Q3	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P	
		VARIABLE RESISTOR		Q4	*1-564-354-21	PLUG, CONNECTOR (2.5MM) 3P	
RV610	1-230-233-11	RES, ADJ, CERAMIC CARBON	4.7K			TRANSISTOR	
		TRANSFORMER		Q201	8-729-245-83	TRANSISTOR 2SC2458	
T609	1-421-400-11	COIL, LINE FILTER		Q202	8-729-245-83	TRANSISTOR 2SC2458	
T610	1-421-400-11	COIL, LINE FILTER		Q203	8-729-245-83	TRANSISTOR 2SC2458	
T611	1-448-108-21	TRANSFORMER, CONVERTER (SRT)		Q209	8-729-245-83	TRANSISTOR 2SC2458	
T612	1-437-173-11	TRANSFORMER, DRIVE		Q210	8-729-603-30	TRANSISTOR 2SC403SP-3	
		VARIATOR		Q211	8-729-245-83	TRANSISTOR 2SC2458	
VDR610	1-807-180-11	VARIATOR SNR-14A300K		Q212	8-729-245-83	TRANSISTOR 2SC2458	
		*****				RESISTOR	
	*A-1270-161-A	Q BOARD, COMPLETE		R201	1-214-702-00	METAL	75 1% 1/4W
		*****		R202	1-247-713-11	CARBON	1K 5% 1/4W
	1-536-937-11	TERMINAL BOARD, INPUT/OUTPUT		R203	1-247-875-00	CARBON	68K 5% 1/6W
		CAPACITOR		R204	1-247-873-00	CARBON	56K 5% 1/6W
C201	1-123-333-00	ELECT	100MF 20% 25V	R205	1-247-831-00	CARBON	1K 5% 1/6W
C202	1-101-006-21	CERAMIC	0.047MF 50V	R206	1-247-807-00	CARBON	100 5% 1/6W
C203	1-123-329-51	ELECT	10MF 20% 25V	R207	1-247-807-00	CARBON	100 5% 1/6W
C204	1-123-318-00	ELECT	33MF 20% 16V	R208	1-247-831-00	CARBON	1K 5% 1/6W
C205	1-123-318-00	ELECT	33MF 20% 16V	R209	1-247-799-00	CARBON	47 5% 1/6W
C206	1-123-329-51	ELECT	10MF 20% 25V	R210	1-214-702-00	METAL	75 1% 1/4W
C207	1-123-318-00	ELECT	33MF 20% 16V	R211	1-247-713-11	CARBON	1K 5% 1/4W
C208	1-123-329-51	ELECT	10MF 20% 25V	R212	1-247-875-00	CARBON	68K 5% 1/6W
C209	1-123-333-00	ELECT	100MF 20% 25V	R213	1-247-873-00	CARBON	56K 5% 1/6W
C210	1-101-006-21	CERAMIC	0.047MF 50V	R214	1-247-831-00	CARBON	1K 5% 1/6W
C211	1-123-329-51	ELECT	10MF 20% 25V	R215	1-247-807-00	CARBON	100 5% 1/6W
C212	1-123-318-00	ELECT	33MF 20% 16V	R216	1-247-849-00	CARBON	5.6K 5% 1/6W
C213	1-123-318-00	ELECT	33MF 20% 16V	R217	1-247-843-00	CARBON	3.3K 5% 1/6W
C214	1-123-318-00	ELECT	33MF 20% 16V	R218	1-214-702-00	METAL	75 1% 1/4W
C215	1-123-329-51	ELECT	10MF 20% 25V	R219	1-247-713-11	CARBON	1K 5% 1/4W
C216	1-123-333-00	ELECT	100MF 20% 25V	R220	1-247-875-00	CARBON	68K 5% 1/6W
C217	1-101-006-21	CERAMIC	0.047MF 50V	R221	1-247-873-00	CARBON	56K 5% 1/6W
C219	1-101-006-21	CERAMIC	0.047MF 50V	R222	1-247-853-00	CARBON	8.2K 5% 1/6W
C220	1-101-006-21	CERAMIC	0.047MF 50V	R223	1-247-841-00	CARBON	2.7K 5% 1/6W
C221	1-101-006-21	CERAMIC	0.047MF 50V	R224	1-247-807-00	CARBON	100 5% 1/6W
		DIODE		R226	1-247-875-00	CARBON	68K 5% 1/6W
D201	8-719-911-19	DIODE 1SS119		R227	1-247-867-00	CARBON	33K 5% 1/6W
D206	8-719-102-90	DIODE RD10E-N2		R228	1-247-831-00	CARBON	1K 5% 1/6W
				R229	1-247-823-00	CARBON	470 5% 1/6W
				R230	1-247-831-00	CARBON	1K 5% 1/6W
				R231	1-247-807-00	CARBON	100 5% 1/6W
				R232	1-247-849-00	CARBON	5.6K 5% 1/6W
				R233	1-247-843-00	CARBON	3.3K 5% 1/6W

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Q

C

DD

DB

DA

Ref.No.	Part No.	Description			Remark	Ref.No.	Part No.	Description			Remark
R234	1-247-119-00	CARBON	330	5%	1/4W	R711	1-202-822-00	SOLID	2.2K	10%	1/2W
R235	1-247-819-00	CARBON	330	5%	1/6W	R712	1-247-815-00	CARBON	220	5%	1/6W
R236	1-247-819-00	CARBON	330	5%	1/6W	R714	1-213-156-00	METAL OXIDE	12K	5%	1W
R237	1-247-867-00	CARBON	33K	5%	1/6W	R715	1-202-822-00	SOLID	2.2K	10%	1/2W
R238	1-247-823-00	CARBON	470	5%	1/6W	R716	1-247-815-00	CARBON	220	5%	1/6W
R239	1-249-429-11	CARBON	10K	5%	1/6W	VARIABLE RESISTOR					
R240	1-249-429-11	CARBON	10K	5%	1/6W	RV701	1-230-164-21	RES, ADJ, METAL GLAZE 55M			
SWITCH						SPARK GAP					
S201	1-553-725-00	SWITCH, SLIDE				SG701	1-519-063-XX	DISCHARGING GAP			
S202	1-553-725-00	SWITCH, SLIDE				*****					
S203	1-553-725-00	SWITCH, SLIDE				*1-615-160-11	DD BOARD	*****			
*****						*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P				
*A-1330-584-A	C BOARD, COMPLETE					CAPACITOR					
*****						C870	1-161-328-00	CERAMIC	0.0047MF	30%	50V
1-526-691-00	SOCKET, CRT					IC					
CONNECTOR						IC805	8-759-170-12	IC UPC78M12H			
C1	*1-564-442-11	PLUG, CONNECTOR (2.5MM)	6P			*****					
C2	*1-564-353-00	PLUG, CONNECTOR (2.5MM)	2P			*1-615-908-11	DB BOARD	*****			
C3	*1-564-354-00	PLUG, CONNECTOR (2.5MM)	3P			CONNECTOR					
C4	*1-564-354-00	PLUG, CONNECTOR (2.5MM)	3P			DB1	*1-564-353-00	PLUG, CONNECTOR (2.5MM)	2P		
CAPACITOR						DB2	*1-564-445-11	PLUG, CONNECTOR (2.5MM)	9P		
C701	1-102-223-00	CERAMIC	0.0047MF	10%	2KV	*****					
C703	1-102-050-00	CERAMIC	0.01MF		500V	*A-1345-552-A	DA BOARD, COMPLETE	*****			
C704	1-123-933-00	ELECT	10MF	20%	160V	3-701-833-01	HEAD, WASHER, TAPPING SCREW				
COIL						CAPACITOR					
L701	1-407-704-00	MICRO INDUCTOR	82UH			C800	1-123-380-00	ELECT	1MF	20%	50V
L702	1-407-709-00	MICRO INDUCTOR	220UH			C801	1-108-599-00	MYLAR	0.068MF	10%	50V
NEON LAMP						C802	1-108-837-00	MYLAR	0.01MF	10%	50V
NE702	1-519-013-13	DISCHARGE TUBE				C803	1-108-837-00	MYLAR	0.01MF	10%	50V
NE703	1-519-013-13	DISCHARGE TUBE				C804	1-123-369-00	ELECT	4.7MF	20%	25V
NE704	1-519-013-13	DISCHARGE TUBE				C805	1-123-369-00	ELECT	4.7MF	20%	25V
NL701	1-519-108-XX	LAMP, NEON ASSY				C806	1-130-868-00	FILM	0.0056MF	5%	50V
TRANSISTOR						C807	1-123-356-00	ELECT	10MF	20%	16V
Q701	8-729-326-11	TRANSISTOR 2SC2611				C808	1-123-382-00	ELECT	3.3MF	20%	50V
Q702	8-729-326-11	TRANSISTOR 2SC2611				C809	1-123-380-00	ELECT	1MF	20%	50V
Q703	8-729-326-11	TRANSISTOR 2SC2611				C810	1-161-059-11	CERAMIC	0.047MF	10%	50V
RESISTOR						C811	1-102-121-00	CERAMIC	0.0022MF	10%	50V
R701	1-202-842-11	SOLID	220K	10%	1/2W	C812	1-123-380-00	ELECT	1MF	20%	50V
R702	1-202-719-00	SOLID	1M	10%	1/2W						
R703	1-202-838-00	SOLID	100K	10%	1/2W						
R706	1-213-156-00	METAL OXIDE	12K	5%	1W						
R707	1-247-815-00	CARBON	220	5%	1/6W						
R709	1-202-822-00	SOLID	2.2K	10%	1/2W						
R710	1-213-156-00	METAL OXIDE	12K	5%	1W						

DA


Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C813	1-123-356-00	ELECT	10MF 20% 16V	D813	8-719-911-19	DIODE 1SS119	
C814	1-124-539-51	ELECT	330MF 20% 35V	D814	8-719-911-19	DIODE 1SS119	
C815	△ 1-129-706-51	FILM	0.0022MF 10% 630V	D815	8-719-911-19	DIODE 1SS119	
C816	△ 1-130-581-11	FILM	0.033MF 3% 600V	D816	8-719-901-83	DIODE 1SS83	
C817	△ 1-129-706-51	FILM	0.0022MF 10% 630V	D817	8-719-911-19	DIODE 1SS119	
C820	1-123-335-00	ELECT	330MF 20% 25V	D818	8-719-911-19	DIODE 1SS119	
C822	1-102-030-00	CERAMIC	330PF 10% 500V	D819	8-719-911-19	DIODE 1SS119	
C823	1-123-347-00	ELECT	330MF 20% 35V	D820	8-719-911-19	DIODE 1SS119	
C824	1-102-030-00	CERAMIC	330PF 10% 500V	D824	8-719-102-61	DIODE RD4.3E-N1	
C825	1-123-933-00	ELECT	10MF 20% 160V	D825	8-719-000-28	THYRISTOR CRO2AM-8	
C826	1-123-329-51	ELECT	10MF 20% 25V	<u>CONNECTOR</u>			
C828	1-130-781-00	FILM	0.22MF 10% 100V	DA1	*1-564-440-11	PLUG, CONNECTOR (2.5MM) 4P	
C830	1-123-356-00	ELECT	10MF 20% 16V	DA2	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P	
C831	1-108-591-00	MYLAR	0.033MF 10% 50V	DA3	*1-564-442-11	PLUG, CONNECTOR (2.5MM) 6P	
C832	1-108-591-00	MYLAR	0.033MF 10% 50V	DA4	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P	
C833	1-123-380-00	ELECT	1MF 20% 50V	DA5	*1-508-765-00	3P PLUG (M)	
C834	1-136-173-00	FILM	0.47MF 5% 50V	DA6	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P	
C835	1-123-322-00	ELECT	330MF 20% 16V	DA7	*1-564-445-11	PLUG, CONNECTOR (2.5MM) 9P	
C836	1-124-245-00	ELECT	4.7MF 20% 25V	DA8	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P	
C837	1-123-379-00	ELECT	0.47MF 20% 50V	<u>IC</u>			
C838	1-108-837-00	MYLAR	0.01MF 10% 50V	IC800	8-759-100-60	IC UPC1377C	
C839	1-108-845-00	MYLAR	0.047MF 10% 50V	IC801	8-759-105-82	IC UPC1378H-P	
C840	1-102-832-00	CERAMIC	330PF 10% 50V	IC802	8-759-145-58	IC UPC4558C	
C841	1-123-360-00	ELECT	100MF 20% 50V	IC803	8-759-240-30	IC TC4030BP	
C842	1-123-335-00	ELECT	330MF 20% 25V	IC804	8-759-245-38	IC TC4538BP	
C843	1-108-837-00	MYLAR	0.01MF 10% 50V	<u>COIL</u>			
C844	1-102-030-00	CERAMIC	330PF 10% 500V	L800	1-408-242-00	MICRO INDUCTOR 10MMH	
C845	1-136-337-11	FILM	3.3MF 10% 100V	L802	1-408-403-00	MICRO INDUCTOR 3.3UH	
C846	1-124-258-00	ELECT	3.3MF 20% 25V	L803	△ 1-459-370-11	COIL, FERRITE (HLC) 22UH	
C850	1-123-329-51	ELECT	10MF 20% 25V	L804	△ 1-459-597-11	COIL, VARIABLE	
C851	1-106-176-00	MYLAR	0.0015MF 5% 50V	L805	1-459-403-00	COIL (WITH CORE)	
C853	1-106-180-00	MYLAR	0.0022MF 5% 50V	L806	1-408-421-00	MICRO INDUCTOR 100UH	
C854	1-102-529-00	CERAMIC	100PF 5% 50V	<u>TRANSISTOR</u>			
C855	1-123-356-00	ELECT	10MF 20% 16V	Q800	8-729-245-83	TRANSISTOR 2SC2458	
C856	1-102-973-00	CERAMIC	100PF 10% 50V	Q801	△ 8-729-201-62	TRANSISTOR 2SC2555	
C857	1-102-038-00	CERAMIC	0.001MF 500V		*4-363-404-00	HOLDER, IC; Q801	
C864	1-124-537-00	ELECT	1200MF 20% 35V		4-363-414-00	SPACER, MICA; Q801	
C866	1-102-074-00	CERAMIC	0.001MF 10% 50V	Q802	8-729-201-99	TRANSISTOR 2SC3075	
C867	1-101-002-00	CERAMIC	0.0022MF 50V	Q803	8-729-245-83	TRANSISTOR 2SC2458	
<u>DIODE</u>				<u>RESISTOR</u>			
D800	8-719-102-74	DIODE RD6.2E-N2		R800	1-249-429-11	CARBON 10K 5% 1/6W	
D801	8-719-911-19	DIODE 1SS119		R801	1-247-850-00	CARBON 6.2K 5% 1/6W	
D803	8-719-300-76	DIODE RH1A		R802	1-249-429-11	CARBON 10K 5% 1/6W	
D804	8-719-300-76	DIODE RH1A		R803	1-247-877-00	CARBON 82K 5% 1/6W	
D805	△ 8-719-901-95	DIODE V19CSS		R804	1-247-857-00	CARBON 12K 5% 1/6W	
D806	8-719-901-93	DIODE V19E		R805	1-247-831-00	CARBON 1K 5% 1/6W	
D807	8-719-901-93	DIODE V19E		R807	1-247-851-00	CARBON 6.8K 5% 1/6W	
D808	△ 8-719-901-93	DIODE V19E		R808	1-247-851-00	CARBON 6.8K 5% 1/6W	
D809	8-719-911-55	DIODE U05G					
D810	8-719-911-19	DIODE 1SS119					
D811	8-719-911-19	DIODE 1SS119					
D812	8-719-911-19	DIODE 1SS119					


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DA HA

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R809	1-247-827-00	CARBON	680 5% 1/6W	R870	1-215-469-00	METAL	100K 1% 1/6W
R810	1-247-827-00	CARBON	680 5% 1/6W	R871	1-247-895-00	CARBON	470K 5% 1/6W
R811	1-247-827-00	CARBON	680 5% 1/6W	R872	1-247-889-00	CARBON	270K 5% 1/6W
R812	1-206-648-00	METAL OXIDE	220 5% 2W F	R873	1-247-831-00	CARBON	1K 5% 1/6W
R813	1-212-360-00	METAL OXIDE	1 5% 1W F	R874	1-247-847-00	CARBON	4.7K 5% 1/6W
R815	1-247-851-00	CARBON	6.8K 5% 1/6W	R876	1-215-427-00	METAL	1.8K 1% 1/6W
R816	1-249-429-11	CARBON	10K 5% 1/6W	VARIABLE RESISTOR			
R818	1-249-429-11	CARBON	10K 5% 1/6W	RV800	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
R819	1-215-461-00	METAL	47K 1% 1/6W	RV801	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
R820	1-215-451-00	METAL	18K 1% 1/6W	RV802	1-228-720-00	RES, ADJ, CERAMIC CARBON 1K	
R821	1-247-879-00	CARBON	100K 5% 1/6W	RV803	1-228-717-00	RES, ADJ, CERAMIC CARBON 220	
R822	1-213-143-00	METAL OXIDE	1K 5% 1W F	RV804	1-224-249-XX	RES, ADJ, METAL GLAZE 1K	
R824	1-247-023-51	CARBON	2.2 5% 1/8W F	RV805	1-223-102-00	RES, ADJ, WIREWOUND 120	
R825	1-210-859-11	CARBON	1.2 5% 1/8W F	RV806	1-228-727-00	RES, ADJ, CERAMIC CARBON 47K	
R826	1-215-445-00	METAL	10K 1% 1/6W	RV808	1-226-703-00	RES, ADJ, METAL GLAZE 10K	
R827	1-213-149-00	METAL OXIDE	3.3K 5% 1W F	RELAY			
R828	1-213-149-00	METAL OXIDE	3.3K 5% 1W F	RY800	1-515-380-00	RELAY	
R829	1-213-149-00	METAL OXIDE	3.3K 5% 1W F	TRANSFORMER			
R830	1-249-429-11	CARBON	10K 5% 1/6W	T800	1-437-082-00	HDT	
R831	1-249-429-11	CARBON	10K 5% 1/6W	*****			
R832	1-247-851-00	CARBON	6.8K 5% 1/6W	*1-615-909-11	HA BOARD		
R833	1-247-863-00	CARBON	22K 5% 1/6W	*****			
R834	1-247-859-00	CARBON	15K 5% 1/6W	*1-560-278-00	PLUG, CONNECTOR 3P		
R835	1-249-429-11	CARBON	10K 5% 1/6W	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P		
R836	1-247-869-00	CARBON	39K 5% 1/6W	CAPACITOR			
R837	1-247-831-00	CARBON	1K 5% 1/6W	C501	1-123-332-00	ELECT	47MF 20% 25V
R838	1-247-824-00	CARBON	510 5% 1/6W	C502	1-101-004-00	CERAMIC	0.01MF 50V
R839	1-247-852-00	CARBON	7.5K 5% 1/6W	C591	1-130-794-00	FILM	0.22MF 10% 250V
R840	1-247-863-00	CARBON	22K 5% 1/6W	C592	1-130-800-00	FILM	2.2MF 10% 250V
R842	1-249-429-11	CARBON	10K 5% 1/6W	DIODE			
R843	1-249-434-11	CARBON	27K 5% 1/6W	D501	8-719-911-19	DIODE 1SS119	
R844	1-247-817-00	CARBON	270 5% 1/6W	D590	8-719-102-74	DIODE RD6.2E-N2	
R845	1-212-368-11	METAL OXIDE	4.7 5% 1W F	D591	8-719-000-28	THYRISTOR CRO2AM-8	
R846	1-213-138-00	METAL OXIDE	390 5% 1W F	D592	8-719-911-55	DIODE U05G	
R847	1-213-138-00	METAL OXIDE	390 5% 1W F	CONNECTOR			
R848	1-213-139-00	METAL OXIDE	470 5% 1W F	HA1	*1-564-451-11	PLUG, CONNECTOR (2.5MM) 3P	
R849	1-247-848-00	CARBON	5.1K 5% 1/6W	HA2	*1-564-452-11	PLUG, CONNECTOR (2.5MM) 4P	
R850	1-249-429-11	CARBON	10K 5% 1/6W	HA3	*1-564-450-11	PLUG, CONNECTOR (2.5MM) 2P	
R851	1-249-429-11	CARBON	10K 5% 1/6W	HA4	*1-564-452-41	PLUG, CONNECTOR (2.5MM) 4P	
R852	1-249-411-11	CARBON	330 5% 1/8W F	HA5	*1-564-452-41	PLUG, CONNECTOR (2.5MM) 4P	
R853	1-247-831-00	CARBON	1K 5% 1/6W	HA6	*1-564-455-11	PLUG, CONNECTOR (2.5MM) 7P	
R855	1-215-434-00	METAL	3.6K 1% 1/6W	HA7	*1-564-453-11	PLUG, CONNECTOR (2.5MM) 5P	
R856	1-247-847-00	CARBON	4.7K 5% 1/6W	HA8	*1-564-353-00	PLUG, CONNECTOR (2.5MM) 2P	
R861	1-247-847-00	CARBON	4.7K 5% 1/6W				
R862	1-247-867-00	CARBON	33K 5% 1/6W				
R863	1-247-831-00	CARBON	1K 5% 1/6W				
R864	1-247-879-00	CARBON	100K 5% 1/6W				
R866	1-249-429-11	CARBON	10K 5% 1/6W				
R867	1-215-433-00	METAL	3.3K 1% 1/6W				
R868	1-249-437-11	CARBON	47K 5% 1/6W				
R869	1-249-437-11	CARBON	47K 5% 1/6W				

- The components identified by  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Select the resistance value according to SAFETY RELATED ADJUSTMENT.

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

HA

HB

X

Ref.No.	Part No.	Description	Remark
<u>TRANSISTOR</u>			
Q501	8-729-245-83	TRANSISTOR 2SC2458	
Q590	8-765-620-00	TRANSISTOR 2SD1015	
<u>RESISTOR</u>			
R500	1-246-517-25	CARBON 68K 5% 1/4W	
R501	1-247-819-00	CARBON 330 5% 1/6W	
R502	1-249-434-11	CARBON 27K 5% 1/6W	
R503	1-247-883-00	CARBON 150K 5% 1/6W	
R504	1-247-867-00	CARBON 33K 5% 1/6W	
R505	1-247-887-00	CARBON 220K 5% 1/6W	
R506	1-247-867-00	CARBON 33K 5% 1/6W	
R507	1-247-873-00	CARBON 56K 5% 1/6W	
R508	1-247-854-00	CARBON 9.1K 5% 1/6W	
R509	1-247-891-00	CARBON 330K 5% 1/6W	
R510	1-247-829-00	CARBON 820 5% 1/6W	
R511	1-247-831-00	CARBON 1K 5% 1/6W	
R512	1-247-163-00	CARBON 22K 5% 1/4W	
R513	1-247-713-11	CARBON 1K 5% 1/4W	
R514	1-247-851-00	CARBON 6.8K 5% 1/6W	
R595	1-202-846-00	SOLID 470K 1/2W	
R596	1-249-437-11	CARBON 47K 5% 1/6W	
R598	1-247-817-00	CARBON 270 5% 1/6W	
R599	1-247-839-00	CARBON 2.2K 5% 1/8W F	
<u>VARIABLE RESISTOR</u>			
RV501	1-230-760-11	RES, VAR, CARBON 1K	
RV502	1-230-761-11	RES, VAR, CARBON 20K/1K	
RV503	1-230-711-11	RES, VAR, CARBON 20K	
RV504	1-230-760-11	RES, VAR, CARBON 1K	
RV505	1-230-762-11	RES, VAR, CARBON 20K	
RV507	1-230-710-11	RES, VAR, CARBON 10K	
RV508	1-226-703-00	RES, ADJ, METAL GLAZE 10K	
RV509	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	
<u>THERMISTOR</u>			
TH501	1-800-944-00	THERMISTOR TH-4700	

	*1-615-910-11	HB BOARD	

	*4-374-809-01	HOLDER (3 GANG), LED	
<u>DIODE</u>			
D502	8-719-812-32	DIODE TLY123	
D503	8-719-812-32	DIODE TLY123	
D504	8-719-812-32	DIODE TLY123	
<u>CONNECTOR</u>			
H82	*1-564-354-00	PLUG, CONNECTOR (2.5MM) 3P	

Ref.No.	Part No.	Description	Remark
<u>SWITCH</u>			
S501	1-554-118-00	SWITCH, PUSH (1 KEY)	
S502	1-554-118-00	SWITCH, PUSH (1 KEY)	
S503	1-554-118-00	SWITCH, PUSH (1 KEY)	
S504	1-554-118-00	SWITCH, PUSH (1 KEY)	
S505	1-554-118-00	SWITCH, PUSH (1 KEY)	

	*1-614-496-11	X BOARD	

	*4-337-424-00	HOLDER (L), LED	
<u>DIODE</u>			
D680	8-719-812-33	DIODE TLG123A	

<u>MISCELLANEOUS</u>			

	△.1-451-265-11	DEFLECTION YOKE (SY-167)	
	1-452-032-00	MAGNET, DISK; 10MM Ø	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
	1-452-126-11	MAGNET	
	△.1-509-546-11	3P INLET	
	1-509-718-00	DIN 4P SOCKET	
L901	△.1-426-043-12	COIL, DEGAUSSING	
S901	△.1-570-200-11	SWITCH, PUSH (AC POWER) 1 KEY)	
T801	△.1-439-358-11	TRANSFORMER ASSY, FLYBACK	
V901	△.8-737-151-05	CRT (A20JKU10X)	

<u>ACCESSORIES AND PACKING MATERIALS</u>			

	Part No.	Description	Remark
	1-508-723-00	4P PLUG, DIN	
	△.1-551-812-11	CORD, POWER	
	3-548-372-00	BAG, POLYETHYLENE	
	4-374-859-01	PLATE, NUMBER, TALLY	
	4-374-870-01	CUSHION (UPPER) (ASSY)	
	4-374-871-01	CUSHION (LOWER) (ASSY)	
	4-374-877-01	INDIVIDUAL CARTON	
	4-482-130-21	MANUAL, INSTRUCTION	
	4-491-213-22	INSTRUCTION	

The components identified by shading and mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Screw:

P 3 x 10

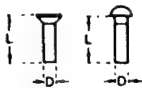
L: Length in mm

D: Diameter in mm

Type of head

Indicated slotted-head only.

Unless otherwise indicated, it means cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft

Reference designation

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazier-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

NOMENCLATURE FERRONNERIE

Vis:

P 3 x 10

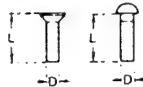
L: Longueur en mm

D: Diamètre en mm

Type de tête

Précise le type de rainure de la tête.

Sauf indication contraire il s'agit de vis cruciforme (Type Phillips)



Erou, Rondelle, Circlips:

N 3

Diamètre de la vis ou de l'axe utilisable

Désignation de la référence

Désignation de la référence	Forme	Description	Remarques
VIS			
P		Vis à tête cylindrique large	Peut être remplacée par une vis à tête cylindrique (B).
PWH		Vis à tête cylindrique large et rondelle fixe.	Peut être remplacée par une vis à tête cylindrique (B) et une rondelle fixe.
PS PSP		Vis à tête cylindrique large et rondelle à ressort fixe.	Peut être remplacée par une vis à tête cylindrique (B) et une rondelle à ressort.
PSW PSPW		Vis à tête cylindrique large et rondelles plates et à ressort.	Peut être remplacée par une vis à tête cylindrique (B) et une rondelle plate plus une rondelle à ressort.
R		Vis à tête ronde	Peut être remplacée par une vis à tête cylindrique (B).
K		Vis à tête fraisée	
RK		Vis à tête fraisée bombée	
B		Vis à tête cylindrique	
T		Vis à tête ronde large	Peut être remplacée par une vis à tête cylindrique (B).
F		Vis à tête moulée plate	
RF		Vis à tête moulée	
BV		Vis à tête soudée	

Désignation de la référence	Forme	Description	Remarques
VIS AUTOTARDEUSES			
TA		Vis autotardeuse	ex: TA, P 3 x 10
PTP		Vis autotardeuse à tête cylindrique large.	Peut être remplacée par une vis autotardeuse à tête cylindrique (TA, B).
PTPWH		Vis autotardeuse à tête cylindrique large et rondelle fixe.	Peut être remplacée par une vis autotardeuse à tête cylindrique (TA, B) et une rondelle plate.
PTTWH		Vis à tige filetée et tête cylindrique large avec rondelle fixe.	Peut être remplacée par une vis à tête cylindrique (B) et une rondelle plate.
VIS DE SERRAGE			
SC		Vis de serrage	
SC		Vis de serrage à douille hexagonale	ex: SC 2.6 x 4, douille hexagonale
ECROU			
N		Erou	
RONDELLES			
W		Rondelle plate	
SW		Rondelle à ressort	
LW		Rondelle éventail denture intérieure	ex: LW3, intérieure
LW		Rondelle éventail denture extérieure	ex: LW3, extérieure
CIRCLIPS			
E		Circlips	
G		Circlips à griffe	

PVM-8220

SONY[®] SERVICE MANUAL

US Model
Canadian Model

Chassis No. SCC-684A-A


October, 1985

No. 1









CORRECTION

SUBJECT: SAFETY CRITICAL COMPONENTS MODIFICATION

All safety critical components will be clearly identified, together with the explanations on the method used on both the schematic and service manual. File this CORRECTION with the service manual.

 : Indicates corrected portions

Page 20: SAFETY RELATED ADJUSTMENTS









Incorrect	Correct
<div>HV PROTECTOR OPERATION CHECK HOLD DOWN <input checked="" type="checkbox"/> R856 ADJUSTMENT</div> <p>Be sure to perform this adjustment when replacing the following parts (marked  on the schematic)</p> <p> C807, C855, D800, D805, D824, D825, IC802, R807, R818, R822, R826, R855, R856, R873, R874, R876</p> <ol style="list-style-type: none">1. Input a monoscope signal. (PICTURE 80% BRT50%)2. Confirm that voltage of $19.6 \pm 1.6V$ appears between TP61 and GND during input of 120V AC.3. Confirm that the HOLD-DOWN circuit operates (the raster disappears) by adding 25.0V DC between TP61 and GND.	<div>HV PROTECTOR OPERATION CHECK HOLD DOWN <input checked="" type="checkbox"/> R856 ADJUSTMENT</div> <p>Be sure to perform this adjustment when replacing the following parts (marked  on the schematic)</p> <p> C807, C855, D800, D805, D824, D825, IC802, R807, R818, R822, R826, R855, R856, R873, R874, R876</p> <ol style="list-style-type: none">1. Input a monoscope signal. (PICTURE 80% BRT50%)2. Confirm that voltage of $19.6 \pm 1.6V$ appears between TP61 and GND during input of 120V AC.3. Confirm that the HOLD-DOWN circuit operates (the raster disappears) by adding $25.00^{+0}_{-0.05}V$ DC between TP61 and GND.
<div>BLANKING OPERATION CHECK <input checked="" type="checkbox"/> R859 ADJUSTMENT</div> <p>Be sure to perform this adjustment when replacing the following parts (marked  on the schematic)</p> <p> D800, D801, IC253, IC802, R456, R457, R807, R819, R820, R822, R859, R862</p> <ol style="list-style-type: none">1. Input a monoscope signal. (PICTURE 80% BRT50%)2. Turn +B ADJ VR (RV807) fully so that +B value is DOWN.3. Confirm that the BLANKING circuit operates (the raster disappears) by adding 24.5V DC between TP91 and GND.	<div>BLANKING OPERATION CHECK <input checked="" type="checkbox"/> R859 ADJUSTMENT</div> <p>Be sure to perform this adjustment when replacing the following parts (marked  on the schematic)</p> <p> D800, D801, IC253, IC802, R456, R457, R807, R819, R820, R822, R859, R862</p> <ol style="list-style-type: none">1. Input a monoscope signal. (PICTURE 80% BRT50%)2. Turn +B ADJ VR (RV610) fully so that +B value is DOWN.3. Confirm that the BLANKING circuit operates (the raster disappears) by adding $24.8^{+0}_{-0.1}V$ DC between TP91 and GND.





MON

Incorrect

Note:






- All capacitors are in μF unless otherwise noted. p : μF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{6}\text{W}$ unless otherwise noted. k: 1000 Ω , M: 1000 k Ω
- Δ : internal component.
-  : nonflammable resistor.
-  : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by  in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by  and repeat the adjustment until the specified value is achieved. (Refer to R626 R859 adjustment on page 20, 21.)
- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
-  : adjustment for repair.
-  : B+ bus.
-  : B- bus.



Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.




Note: Les composants identifiés par une trame et par une marque  sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.


Correct


Note:

- All capacitors are in μF unless otherwise noted. p : μF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{6}\text{W}$ unless otherwise noted. k: 1000 Ω , M: 1000 k Ω
- Δ : internal component.
-  : nonflammable resistor.
-  : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by  in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by  and repeat the adjustment until the specified value is achieved. (Refer to R626, R856, R859 adjustment on page 19, 20, 21.)

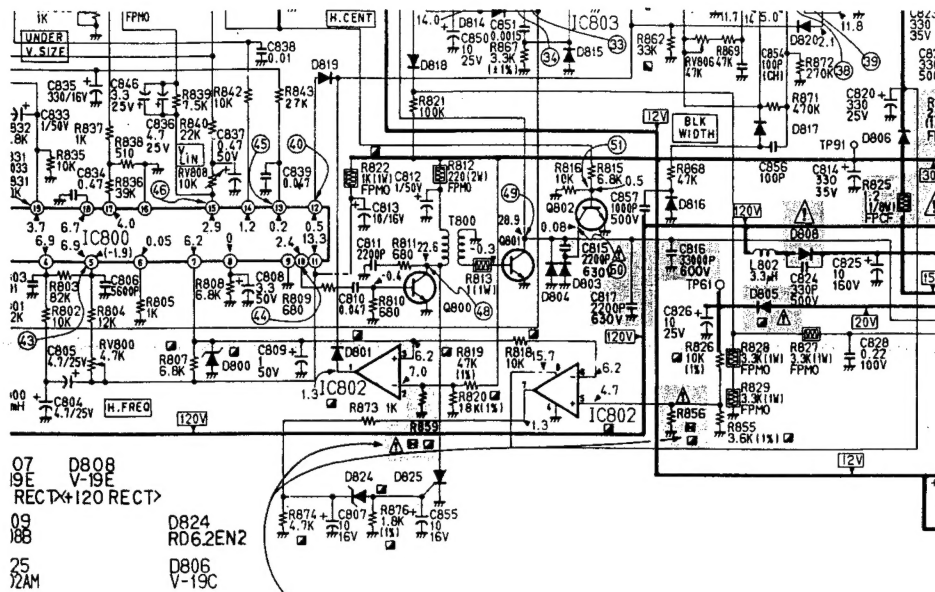
	
C807, C855, D800, D805, D824, D825, IC802, R807, R818, R822, R826, R855, R856, R873, R874, R876	R856 (HOLD DOWN) (ADJUSTMENT)
D800, D801, IC253, IC802, R456, R457, R807, R819, R820, R822, R859, R862	R859 (BLANKING OPERATION CHECK ADJUSTMENT)
D626, IC611, R619, R620, R626, R627, R628, RV610	R626 (+B MAX CHECK ADJUSTMENT)

- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
-  : adjustment for repair.
-  : B+ bus.
-  : B- bus.

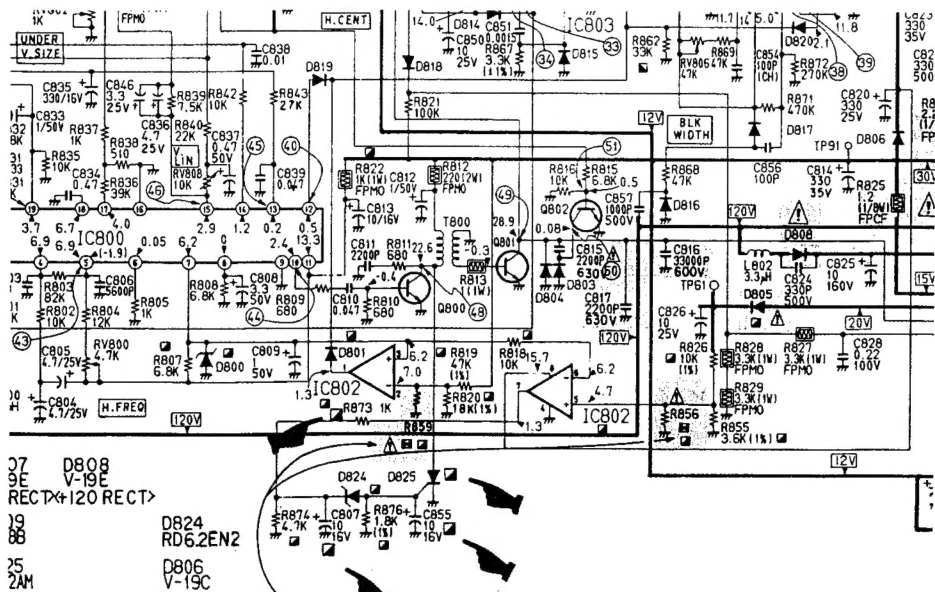
Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

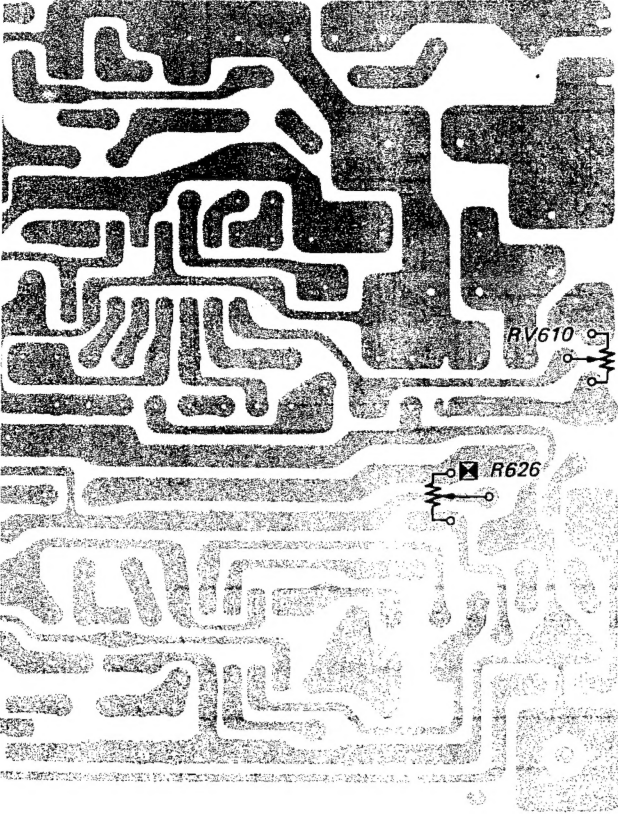
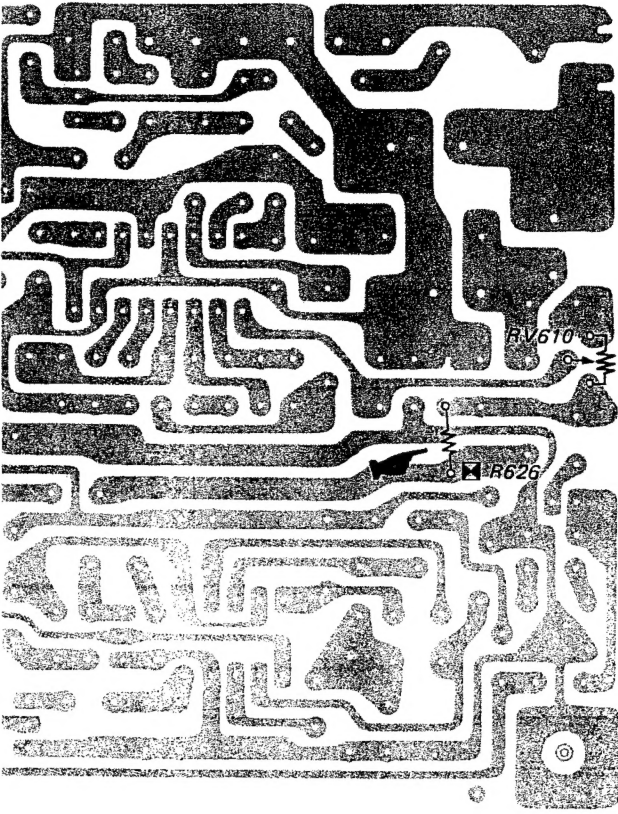
Note: Les composants identifiés par une trame et par une marque  sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

Incorrect



Correct



Incorrect	Correct
<p data-bbox="288 285 392 310">FB Board</p> 	
<div data-bbox="147 1230 410 1284"> +B MAX CHECK <input checked="" type="checkbox"/> R626 ADJUSTMENT </div> <p data-bbox="144 1313 715 1363"><i>Be sure to perform this adjustment when replacing the following parts (marked <input checked="" type="checkbox"/> on the schematic)</i></p> <p data-bbox="144 1371 705 1400"><input checked="" type="checkbox"/> R619, R620, R626, R627, R628, RV610, D626, IC611</p> <ol data-bbox="144 1437 715 1558" style="list-style-type: none"> 1. Input a monoscope signal. (PICTURE 80% BRT 50%) 2. Turn +B ADJ VR (RV807) fully so that +B value is maximum. (Input of 130V $\begin{smallmatrix} +2 \\ -0 \end{smallmatrix}$ V AC) 3. Confirm that TP91 value is less than 31.5V dc. 	<div data-bbox="818 1230 1078 1284"> +B MAX CHECK <input checked="" type="checkbox"/> R626 ADJUSTMENT </div> <p data-bbox="812 1313 1382 1363"><i>Be sure to perform this adjustment when replacing the following parts (marked <input checked="" type="checkbox"/> on the schematic)</i></p> <p data-bbox="812 1371 1367 1400"><input checked="" type="checkbox"/> R619, R620, R626, R627, R628, RV610, D626, IC611</p> <ol data-bbox="812 1437 1382 1558" style="list-style-type: none"> 1. Input a monoscope signal. (PICTURE 80% BRT 50%) 2. Turn +B ADJ VR (RV610) fully so that +B value is maximum. (Input of 130V $\begin{smallmatrix} +2 \\ -0 \end{smallmatrix}$ V AC) 3. Confirm that TP91 value is less than 31.5V dc.